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Ser Ala Thr Ile Gln Ala Gln Leu Gln Leu Pro Pro Pro Ala Cys Ser				
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Ile Leu Leu Thr Asn Phe Leu Cys Thr Leu Pro Ala Gly His Gln Ile				
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Gly Thr Val Ser Pro Leu Phe Gln Lys Leu Glu Asn Asp Gln Ile Glu				
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Ser Leu Arg Gln Arg Phe Gly Gly Gly Gln Ala Lys Thr Ser Leu Lys				
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Pro Ala Val Val Glu Thr Val Thr Thr Ala Lys Pro Gln Gln Ile Gln				
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Ala Leu Met Asp Glu Val Thr Lys Gln Gly Asn Ile Val Arg Glu Leu				
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Lys Ala Gln Lys Ala Asp Lys Asn Glu Val Ala Ala Glu Val Ala Lys				
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ctc ttg gat cta aag aaa cag ttg gct gta gct gag ggg aaa ccc cct				2707
Leu Leu Asp Leu Lys Lys Gln Leu Ala Val Ala Glu Gly Lys Pro Pro				
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Trp Arg Phe Tyr Leu	Leu Tyr Ile Arg Pro	Glu Gly Gln Asp Ser	Ala	
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Ala Gly Arg Ala Arg Gly Arg Ala Glu Val Leu Ile Ser Thr Val Gly
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Leu Val Glu Ala Ala Val Gln Lys Ala Ile Pro Glu Tyr Met Thr Ile							
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tcc cag aaa cat gtg gag gtc cag att gat aaa gag gca tac ctg gct							948
Ser Gln Lys His Val Glu Val Gln Ile Asp Lys Glu Ala Tyr Leu Ala							
159		164		169			174

gtg aat gca gct gga ggt gtg gag gtc tac agt ggc aat cag aga ata 996
Val Asn Ala Ala Gly Gly Val Glu Val Tyr Ser Gly Asn Gln Arg Ile
175 180 185 190

aag gtt tca aat acc ttg gaa agc cga ctg gat ctc tca gcc aag caa 1044
Lys Val Ser Asn Thr Leu Glu Ser Arg Leu Asp Leu Ser Ala Lys Gln
191 196 201 206

aag atg cca gaa ata cga atg gcc ttg ttt ggt gct aac acc aac aga 1092
Lys Met Pro Glu Ile Arg Met Ala Leu Phe Gly Ala Asn Thr Asn Arg
207 212 217 222

aag ttc ttt ata taa gcctctggga agtgaagcta gtgttgaacc actaaaccat 1147
Lys Phe Phe Ile *
223

aaaagtttaa gttttttggg gaaaggaaac tagtagtggt tcctcctctt tgatgctctg 1207

atactgttct gtttttcttc acgaaatacc ctttgatag ctaaagtgtt aactttgaaa 1267

taaagcccaa attaatgctc agaaaaaaaa aaaaa 1302

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aaggcgggtg aaaggctgcc tcccagagact ctccttgctt ggaattctgc ccactctgcg 120

gagttagcag tcacgacctc cagcacagg atg tgg tac cac aga ttg tcc cac 173
Met Trp Tyr His Arg Leu Ser His
1 5

cta cac agc agg ctt cag gac ttg ctg aag gga gga gtc ata tat ccg 221
Leu His Ser Arg Leu Gln Asp Leu Leu Lys Gly Gly Val Ile Tyr Pro
9 14 19 24

gcc ctt cca cag ccc aac ttc aaa agc tta ctt cct tta gct gtc cat 269
Ala Leu Pro Gln Pro Asn Phe Lys Ser Leu Leu Pro Leu Ala Val His
25 30 35 40

tgg cac cat aca gcc tcc aag tct ctg act tgt gct tgg cag caa cat 317
Trp His His Thr Ala Ser Lys Ser Leu Thr Cys Ala Trp Gln Gln His
41 46 51 56

gaa gat cat ttt gag ctg aaa tat gct aat acc gtg atg cgc ttt gat 365
Glu Asp His Phe Glu Leu Lys Tyr Ala Asn Thr Val Met Arg Phe Asp

57	62	67	72	
tac gtc tgg ctt cga gac cac tgc cgc tca gca tgc tgc tac aac tct				413
Tyr Val Trp Leu Arg Asp His Cys Arg Ser Ala Ser Cys Tyr Asn Ser				
73	78	83	88	
aag act cac cag cgc agc ctg gat act gcc agt gtg gat tta tgt atc				461
Lys Thr His Gln Arg Ser Leu Asp Thr Ala Ser Val Asp Leu Cys Ile				
89	94	99	104	
aag cca aag acc att cgt ctg gat gag acc aca ctc ttt ttc act tgg				509
Lys Pro Lys Thr Ile Arg Leu Asp Glu Thr Thr Leu Phe Phe Thr Trp				
105	110	115	120	
cca gat ggt cat gtg act aaa tat gat ttg aat tgg ctg gtg aaa aac				557
Pro Asp Gly His Val Thr Lys Tyr Asp Leu Asn Trp Leu Val Lys Asn				
121	126	131	136	
agc tat gaa ggg cag aaa caa aaa gtc atc cag cct aga ata cta tgg				605
Ser Tyr Glu Gly Gln Lys Gln Lys Val Ile Gln Pro Arg Ile Leu Trp				
137	142	147	152	
aat gct gaa atc tac cag caa gcc caa gtt cca tgc gta gat tgc cag				653
Asn Ala Glu Ile Tyr Gln Gln Ala Gln Val Pro Ser Val Asp Cys Gln				
153	158	163	168	
agc ttc tta gaa acc aac gag gga ctg aag aag ttt ctg caa aac ttt				701
Ser Phe Leu Glu Thr Asn Glu Gly Leu Lys Lys Phe Leu Gln Asn Phe				
169	174	179	184	
ctg ctc tat gga att gca ttc gta gaa aat gtc cct ccc act caa gag				749
Leu Leu Tyr Gly Ile Ala Phe Val Glu Asn Val Pro Pro Thr Gln Glu				
185	190	195	200	
cac aca gag aag ttg gca gaa agg atc agc tta atc aga gaa acc att				797
His Thr Glu Lys Leu Ala Glu Arg Ile Ser Leu Ile Arg Glu Thr Ile				
201	206	211	216	
tat ggg agg atg tgg tat ttc act tca gac ttc tcc aga ggt gac act				845
Tyr Gly Arg Met Trp Tyr Phe Thr Ser Asp Phe Ser Arg Gly Asp Thr				
217	222	227	232	
gcg tac acc aag cta gct ctg gat cgg cac act gac act acc tat ttt				893
Ala Tyr Thr Lys Leu Ala Leu Asp Arg His Thr Asp Thr Thr Tyr Phe				
233	238	243	248	
caa gag ccc tgt ggc att caa gtg ttt cat tgt ctt aaa cat gaa gga				941
Gln Glu Pro Cys Gly Ile Gln Val Phe His Cys Leu Lys His Glu Gly				
249	254	259	264	
act ggt ggc agg aca ctg cta gta gat gga ttc tat gca gca gaa cag				989
Thr Gly Gly Arg Thr Leu Leu Val Asp Gly Phe Tyr Ala Ala Glu Gln				
265	270	275	280	
gta ctt caa aag gca cct gag gaa ttt gaa ctc ctc agt aaa gtg cca				1037
Val Leu Gln Lys Ala Pro Glu Glu Phe Glu Leu Leu Ser Lys Val Pro				
281	286	291	296	

ttg aag cat gaa tat att gaa gat gtt gga gaa tgt cac aac cac atg	1085
Leu Lys His Glu Tyr Ile Glu Asp Val Gly Glu Cys His Asn His Met	
297 302 307 312	
att ggg att ggg cca gtc tta aat atc tac cca tgg aat aaa gag ctg	1133
Ile Gly Ile Gly Pro Val Leu Asn Ile Tyr Pro Trp Asn Lys Glu Leu	
313 318 323 328	
tat ttg atc agg tac aac aac tat gac cgg gct gtc atc aat acc gtt	1181
Tyr Leu Ile Arg Tyr Asn Asn Tyr Asp Arg Ala Val Ile Asn Thr Val	
329 334 339 344	
cct tat gat gtc gtc cat cgc tgg tat aca gca cac cgg act cta acg	1229
Pro Tyr Asp Val Val His Arg Trp Tyr Thr Ala His Arg Thr Leu Thr	
345 350 355 360	
ata gag ttg agg aga cct gag aat gag ttt tgg gtc aaa cta aag cct	1277
Ile Glu Leu Arg Arg Pro Glu Asn Glu Phe Trp Val Lys Leu Lys Pro	
361 366 371 376	
ggc agg gtc cta ttt ata gac aac tgg cgt gtc cta cat ggc agg gaa	1325
Gly Arg Val Leu Phe Ile Asp Asn Trp Arg Val Leu His Gly Arg Glu	
377 382 387 392	
tgc ttc act ggc tac cgc caa ctg tgt ggc tgc tat tta aca aga gat	1373
Cys Phe Thr Gly Tyr Arg Gln Leu Cys Gly Cys Tyr Leu Thr Arg Asp	
393 398 403 408	
gat gta tta aac act gct cgc ctc ttg ggg ctt cag gct taa aattgac	1422
Asp Val Leu Asn Thr Ala Arg Leu Leu Gly Leu Gln Ala *	
409 414 419	
agcatctgga ttatgaatac acctggcacc ctggctacca gaatttcata tgggcagaat	1482
aatattgtgt caaactctaa aaaaaaaaaa	1512

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gccaatattc aacagcggtc ttaaaactgaa caagcatatc aaagagaatc ataaaaacat	180
tccottggcc ctgaattata tccacaatgg gaagaaatcc agggccttaa gccccctatc	240

tcctgtggcc atagagcaga catctcttaa g	atg atg cag gca gta gga ggt	292
	Met Met Gln Ala Val Gly Gly	
	1 5	
gca cct gca cgt ccc act gga gaa tat atc tgt aat caa tgt ggt gct		340
Ala Pro Ala Arg Pro Thr Gly Glu Tyr Ile Cys Asn Gln Cys Gly Ala		
8 13 18 23		
aag tac aca tcc cta gac agc ttt cag act cac cta aaa act cat ctc		388
Lys Tyr Thr Ser Leu Asp Ser Phe Gln Thr His Leu Lys Thr His Leu		
24 29 34 39		
gac act gtg ctt cca aaa ttg acc tgt cct cag tgc aac aag gaa ttc		436
Asp Thr Val Leu Pro Lys Leu Thr Cys Pro Gln Cys Asn Lys Glu Phe		
40 45 50 55		
ccc aac caa gaa tcc ttg ctg aag cat gtt acc att cac ttt atg atc		484
Pro Asn Gln Glu Ser Leu Leu Lys His Val Thr Ile His Phe Met Ile		
56 61 66 71		
act tca acg tat tac atc tgt gag agt tgt gac aag caa ttc aca tca		532
Thr Ser Thr Tyr Tyr Ile Cys Glu Ser Cys Asp Lys Gln Phe Thr Ser		
72 77 82 87		
gtg gat gac ctt cag aaa cac ctg ctg gac atg cac acc ttt gtc ttc		580
Val Asp Asp Leu Gln Lys His Leu Leu Asp Met His Thr Phe Val Phe		
88 93 98 103		
ttt cgc tgc acc ctc tgc cag gaa gtt ttt gac tca aaa gtc tcc att		628
Phe Arg Cys Thr Leu Cys Gln Glu Val Phe Asp Ser Lys Val Ser Ile		
104 109 114 119		
cag ctc cac ttg gct gtg aag cac agt aac gaa aag aaa gtc tat agg		676
Gln Leu His Leu Ala Val Lys His Ser Asn Glu Lys Lys Val Tyr Arg		
120 125 130 135		
tgc aca tct tgc aac tgg gac ttc cgc aac gaa act gac ttg cag ctc		724
Cys Thr Ser Cys Asn Trp Asp Phe Arg Asn Glu Thr Asp Leu Gln Leu		
136 141 146 151		
cat gtg aaa cac aac cac ctg gaa aac caa ggg aaa gtg cat aag tgc		772
His Val Lys His Asn His Leu Glu Asn Gln Gly Lys Val His Lys Cys		
152 157 162 167		
att ttc tgc ggt gag tcc ttt ggc acc gag gtg gag ctg caa tgc cac		820
Ile Phe Cys Gly Glu Ser Phe Gly Thr Glu Val Glu Leu Gln Cys His		
168 173 178 183		
atc acc act cac agt aag aag tac aac tgc aag ttc tgt agc aaa gcc		868
Ile Thr Thr His Ser Lys Lys Tyr Asn Cys Lys Phe Cys Ser Lys Ala		
184 189 194 199		
ttc cat gcg atc att ttg tta gaa aaa cac ttg cga gaa aaa cac tgt		916
Phe His Ala Ile Ile Leu Leu Glu Lys His Leu Arg Glu Lys His Cys		
200 205 210 215		

gta ttc gaa acc aag aca ccc aac tgt gga aca aat gga gct tcc gag	964
Val Phe Glu Thr Lys Thr Pro Asn Cys Gly Thr Asn Gly Ala Ser Glu	
216 221 226 231	
caa gtg cag aaa gag gaa gtg gag ctg cag act ttg ctg acc aac agc	1012
Gln Val Gln Lys Glu Glu Val Glu Leu Gln Thr Leu Leu Thr Asn Ser	
232 237 242 247	
cag gag tcc cac aac agt cac gat ggg agc gaa gaa gac gtt gac acc	1060
Gln Glu Ser His Asn Ser His Asp Gly Ser Glu Glu Asp Val Asp Thr	
248 253 258 263	
tct gag cct atg tac ggc tgc gac att tgt ggg gca gcc tac act atg	1108
Ser Glu Pro Met Tyr Gly Cys Asp Ile Cys Gly Ala Ala Tyr Thr Met	
264 269 274 279	
gaa act ttg ctg cag aat cac cag ctc cga gac cac aac atc aga cct	1156
Glu Thr Leu Leu Gln Asn His Gln Leu Arg Asp His Asn Ile Arg Pro	
280 285 290 295	
gga gaa agt gcc atc gtg aaa aag aaa gct gag ctc att aaa ggg aat	1204
Gly Glu Ser Ala Ile Val Lys Lys Lys Ala Glu Leu Ile Lys Gly Asn	
296 301 306 311	
tac aag tgc aac gtg tgc tct cga acc ttc ttc tcc gaa aat ggc ctc	1252
Tyr Lys Cys Asn Val Cys Ser Arg Thr Phe Phe Ser Glu Asn Gly Leu	
312 317 322 327	
cgg gaa cat atg cag acc cac cta ggc cct gtc aaa cac tac atg tgc	1300
Arg Glu His Met Gln Thr His Leu Gly Pro Val Lys His Tyr Met Cys	
328 333 338 343	
cct att tgc gga gag cgg ttt ccc tcc ctt tta act ctt act gaa cac	1348
Pro Ile Cys Gly Glu Arg Phe Pro Ser Leu Leu Thr Leu Thr Glu His	
344 349 354 359	
aaa gtc acg cat agt aag agt ctt gat act gga aac tgc cgg att tgc	1396
Lys Val Thr His Ser Lys Ser Leu Asp Thr Gly Asn Cys Arg Ile Cys	
360 365 370 375	
aag atg cct ctc cag agt gaa gag gag ttt tta gag cat tgc caa atg	1444
Lys Met Pro Leu Gln Ser Glu Glu Glu Phe Leu Glu His Cys Gln Met	
376 381 386 391	
cac cct gac ttg agg aat tcc ctg aca ggc ttt cgc tgc gtg gtg tgc	1492
His Pro Asp Leu Arg Asn Ser Leu Thr Gly Phe Arg Cys Val Val Cys	
392 397 402 407	
atg cag aca gtg acc tcc acc ttg gaa ctc aaa atc cat ggg acg ttc	1540
Met Gln Thr Val Thr Ser Thr Leu Glu Leu Lys Ile His Gly Thr Phe	
408 413 418 423	
cac atg caa aag aca ggg aat ggg tct gca gtt cag acc aca ggg cgg	1588
His Met Gln Lys Thr Gly Asn Gly Ser Ala Val Gln Thr Thr Gly Arg	
424 429 434 439	
ggc cag cac gtc caa aaa ctg tat aag tgc gca tct tgc ctc aaa gaa	1636

Gly	Gln	His	Val	Gln	Lys	Leu	Tyr	Lys	Cys	Ala	Ser	Cys	Leu	Lys	Glu		
440					445					450					455		
ttc	cgt	tcc	aag	caa	gat	ctg	gtg	aaa	ctt	gat	atc	aat	ggc	ctg	cca	1684	
Phe	Arg	Ser	Lys	Gln	Asp	Leu	Val	Lys	Leu	Asp	Ile	Asn	Gly	Leu	Pro		
456					461					466					471		
tat	ggg	ctg	tgt	gcc	ggc	tgc	gtg	aat	ctc	agt	aag	agc	gcc	agc	cca	1732	
Tyr	Gly	Leu	Cys	Ala	Gly	Cys	Val	Asn	Leu	Ser	Lys	Ser	Ala	Ser	Pro		
472					477					482					487		
ggc	att	aac	gtc	cct	ccc	ggc	acg	aat	aga	cca	ggc	ttg	ggc	cag	aat	1780	
Gly	Ile	Asn	Val	Pro	Pro	Gly	Thr	Asn	Arg	Pro	Gly	Leu	Gly	Gln	Asn		
488					493					498					503		
gag	aat	ctg	agt	gcc	att	gag	ggg	aaa	ggc	aag	gtg	ggg	gga	ctg	aag	1828	
Glu	Asn	Leu	Ser	Ala	Ile	Glu	Gly	Lys	Gly	Lys	Val	Gly	Gly	Leu	Lys		
504					509					514					519		
aca	cgc	tgc	tct	agc	tgc	aac	gtt	aag	ttt	gag	tct	gaa	agt	gaa	ctc	1876	
Thr	Arg	Cys	Ser	Ser	Cys	Asn	Val	Lys	Phe	Glu	Ser	Glu	Ser	Glu	Leu		
520					525					530					535		
cag	aac	cac	atc	caa	acc	atc	cac	cga	gag	ctc	gtg	cca	gac	agc	aac	1924	
Gln	Asn	His	Ile	Gln	Thr	Ile	His	Arg	Glu	Leu	Val	Pro	Asp	Ser	Asn		
536					541					546					551		
agc	aca	cag	ttg	aaa	acg	ccc	caa	gta	tca	cca	atg	ccc	aga	atc	agt	1972	
Ser	Thr	Gln	Leu	Lys	Thr	Pro	Gln	Val	Ser	Pro	Met	Pro	Arg	Ile	Ser		
552					557					562					567		
ccc	tcc	cag	tcg	gat	gag	aag	aag	acc	tat	caa	tgc	atc	aag	tgt	cag	2020	
Pro	Ser	Gln	Ser	Asp	Glu	Lys	Lys	Thr	Tyr	Gln	Cys	Ile	Lys	Cys	Gln		
568					573					578					583		
atg	gtt	ttc	tac	aat	gaa	tgg	gat	att	cag	gtt	cat	gtt	gca	aat	cac	2068	
Met	Val	Phe	Tyr	Asn	Glu	Trp	Asp	Ile	Gln	Val	His	Val	Ala	Asn	His		
584					589					594					599		
atg	att	gat	gaa	gga	ctg	aac	cat	gaa	tgc	aaa	ctc	tgc	agc	cag	acc	2116	
Met	Ile	Asp	Glu	Gly	Leu	Asn	His	Glu	Cys	Lys	Leu	Cys	Ser	Gln	Thr		
600					605					610					615		
ttt	gac	tct	cct	gcc	aaa	ctc	cag	tgc	cac	ctg	ata	gag	cac	agc	ttc	2164	
Phe	Asp	Ser	Pro	Ala	Lys	Leu	Gln	Cys	His	Leu	Ile	Glu	His	Ser	Phe		
616					621					626					631		
gaa	ggg	atg	gga	ggc	acc	ttc	aag	tgt	cca	gtc	tgc	ttt	aca	gta	ttt	2212	
Glu	Gly	Met	Gly	Gly	Thr	Phe	Lys	Cys	Pro	Val	Cys	Phe	Thr	Val	Phe		
632					637					642					647		
gtt	caa	gca	aac	aag	ttg	cag	cag	cat	att	ttc	tct	gcc	cat	gga	caa	2260	
Val	Gln	Ala	Asn	Lys	Leu	Gln	Gln	His	Ile	Phe	Ser	Ala	His	Gly	Gln		
648					653					658					663		
gaa	gac	aag	atc	tat	gac	tgt	aca	caa	tgt	cca	cag	aag	ttt	ttc	ttc	2308	
Glu	Asp	Lys	Ile	Tyr	Asp	Cys	Thr	Gln	Cys	Pro	Gln	Lys	Phe	Phe	Phe		

664	669	674	679	
caa aca gag ctg cag aat cat aca atg acc caa cac agc agt tag tgc				2356
Gln Thr Glu Leu Gln Asn His Thr Met Thr Gln His Ser Ser *				
680	685	690		
aagtacagtc tctcaaggag aattgatttt gtggcacaaa aaggaacat gttttactct				2416
ttgcacgaaa ctttcattgt taatgtatat tattcagaaa cattgtattg taccataaaa				2476
cttgattat caaactgttg gatgttcacg tggttgaaact tttgcgcacc ggatagaccc				2536
cttgatatata aagtgttgca catgtattat gtcgtctgat actaaaatgg tcttataaag				2596
acaagtggac ttgggcccta ttcaggcaag attaaaaaaaa aaaaaaaagg gcggccgctc				2656
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gaa gaa cag aag gcg atc aag gcc aag tat ccg cca gtc aat agg aag	95	
Glu Glu Gln Lys Ala Ile Lys Ala Lys Tyr Pro Pro Val Asn Arg Lys		
15 20 25 30		
tac gag tat ttg gat cat aca gca gat gtc cag tta cac gca tgg gga	143	
Tyr Glu Tyr Leu Asp His Thr Ala Asp Val Gln Leu His Ala Trp Gly		
31 36 41 46		
gat act ctg gag gaa gca ttt gag caa tgt gca atg gcc atg ttt ggt	191	
Asp Thr Leu Glu Glu Ala Phe Glu Gln Cys Ala Met Ala Met Phe Gly		
47 52 57 62		
tac atg aca gat act ggg aca gtg gag ccc ctc caa aca gta gaa gta	239	
Tyr Met Thr Asp Thr Gly Thr Val Glu Pro Leu Gln Thr Val Glu Val		
63 68 73 78		
gaa acc caa gga gat gac tta cag tct ctt ctg ttt cac ttt ttg gat	287	
Glu Thr Gln Gly Asp Asp Leu Gln Ser Leu Leu Phe His Phe Leu Asp		
79 84 89 94		

gaa tgg ctt tat aag ttc agt gct gat gaa ttc ttc ata ccc cgg gaa	335
Glu Trp Leu Tyr Lys Phe Ser Ala Asp Glu Phe Phe Ile Pro Arg Glu	
95 100 105 110	
gtg aaa gta ctt agc att gat caa aga aat ttc aaa tta cga tca att	383
Val Lys Val Leu Ser Ile Asp Gln Arg Asn Phe Lys Leu Arg Ser Ile	
111 116 121 126	
ggg tgg gga gaa gaa ttt tca ttg tcc aag cac cct cag gga aca gaa	431
Gly Trp Gly Glu Glu Phe Ser Leu Ser Lys His Pro Gln Gly Thr Glu	
127 132 137 142	
gtc aaa gca ata aca tat tca gca atg cag gtc tat aat gaa gag aac	479
Val Lys Ala Ile Thr Tyr Ser Ala Met Gln Val Tyr Asn Glu Glu Asn	
143 148 153 158	
ccg gaa gtt ttt gtg atc att gac att taa g acaccaaaaa ataaaagact	530
Pro Glu Val Phe Val Ile Ile Asp Ile *	
159 164	
cctacgaaga aaaaaaaaaa	550

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gccgcccggg acgcttgctc cctccctgcc ccctacacgg cgtccctcag gcgcccccat	420
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ctagaccctt tctcctccag gagacggatc tctctccgac ctgccacaga tcccctattc	600
aagaccaccc accttctggt accagatcgc gcccatctag gttatttccg tgggatactg	660

ttg agc cgt gga ggg gaa att gag ggc ttt cgc ctt agc gcc cac tgc	1510
Leu Ser Arg Gly Gly Glu Ile Glu Gly Phe Arg Leu Ser Ala His Cys	
208 213 218 223	
tcc tgt gac agc agg gat aac aca ctg caa gtg gac atc aac ggg ttc	1558
Ser Cys Asp Ser Arg Asp Asn Thr Leu Gln Val Asp Ile Asn Gly Phe	
224 229 234 239	
act acc ggc cgc cga ggt gac ctg gcc acc att cat ggc atg aac cgg	1606
Thr Thr Gly Arg Arg Gly Asp Leu Ala Thr Ile His Gly Met Asn Arg	
240 245 250 255	
cct ttc ctg ctt ctc atg gcc acc ccg ctg gag agg gcc cag cat ctg	1654
Pro Phe Leu Leu Leu Met Ala Thr Pro Leu Glu Arg Ala Gln His Leu	
256 261 266 271	
caa agc tcc cgg cac cgc cga gcc ctg gac acc aac tat tgc ttc agc	1702
Gln Ser Ser Arg His Arg Arg Ala Leu Asp Thr Asn Tyr Cys Phe Ser	
272 277 282 287	
tcc acg gag aag aac tgc tgc gtg cgg cag ctg tac att gac ttc cgc	1750
Ser Thr Glu Lys Asn Cys Cys Val Arg Gln Leu Tyr Ile Asp Phe Arg	
288 293 298 303	
aag gac ctc ggc tgg aag tgg atc cac gag ccc aag ggc tac cat gcc	1798
Lys Asp Leu Gly Trp Lys Trp Ile His Glu Pro Lys Gly Tyr His Ala	
304 309 314 319	
aac ttc tgc ctc ggg ccc tgc ccc tac att tgg agc ctg gac acg cag	1846
Asn Phe Cys Leu Gly Pro Cys Pro Tyr Ile Trp Ser Leu Asp Thr Gln	
320 325 330 335	
tac agc aag gtc ctg gcc ctg tac aac cag cat aac ccg ggc gcc tgc	1894
Tyr Ser Lys Val Leu Ala Leu Tyr Asn Gln His Asn Pro Gly Ala Ser	
336 341 346 351	
gcg gcg ccg tgc tgc gtg ccg cag gcg ctg gag ccg ctg ccc atc gtg	1942
Ala Ala Pro Cys Cys Val Pro Gln Ala Leu Glu Pro Leu Pro Ile Val	
352 357 362 367	
tac tac gtg ggc cgc aag ccc aag gtg gag cag ctg tcc aac atg atc	1990
Tyr Tyr Val Gly Arg Lys Pro Lys Val Glu Gln Leu Ser Asn Met Ile	
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Met Glu Lys Asp Lys His Ser His Phe Tyr Asn Gln Lys Ser Asp
1 5 10
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Phe Arg Ile Glu His Ser Met Leu Glu Glu Leu Glu Asn Lys Leu Ile
16 21 26 31
cac agc agg aaa aca gaa aga gca aaa atc cag caa caa ttg gcc aaa 263
His Ser Arg Lys Thr Glu Arg Ala Lys Ile Gln Gln Gln Leu Ala Lys
32 37 42 47
ata cat aat aat gta aag aaa ctt cag cat caa tta aaa gat gtg aag 311
Ile His Asn Asn Val Lys Lys Leu Gln His Gln Leu Lys Asp Val Lys
48 53 58 63
cct aca cct gat ttt gtt gag aag ctc aga gaa atg atg gaa gaa att 359
Pro Thr Pro Asp Phe Val Glu Lys Leu Arg Glu Met Met Glu Glu Ile
64 69 74 79
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                        Met Ala Ser Phe Pro Pro Arg Val Asn Glu Lys
                        1                      5

gag atc gtg aga tca cgt act ata ggt gaa ctt tta gct cct gca gct      397
Glu Ile Val Arg Ser Arg Thr Ile Gly Glu Leu Leu Ala Pro Ala Ala
12                      17                      22                      27

cct ttt gac aag aaa tgt ggt cgt gaa aat tgg act gtt gct ttt gct      445
Pro Phe Asp Lys Lys Cys Gly Arg Glu Asn Trp Thr Val Ala Phe Ala
28                      33                      38                      43

cca gat ggt tca tac ttt gct tgg tca caa gga cat cgc aca gta aag      493
Pro Asp Gly Ser Tyr Phe Ala Trp Ser Gln Gly His Arg Thr Val Lys
44                      49                      54                      59

ctt gtt ccg tgg tcc cag tgc ctt cag aac ttt ctc ttg cat ggc acc      541
Leu Val Pro Trp Ser Gln Cys Leu Gln Asn Phe Leu Leu His Gly Thr
60                      65                      70                      75

aag aat gtt acc aat tca agc agt tta aga ttg cca aga caa aat agt      589
Lys Asn Val Thr Asn Ser Ser Ser Leu Arg Leu Pro Arg Gln Asn Ser
76                      81                      86                      91

gat ggt ggt cag aaa aat aag cct cgt gaa cat att ata gac tgt gga      637
Asp Gly Gly Gln Lys Asn Lys Pro Arg Glu His Ile Ile Asp Cys Gly
92                      97                      102                      107

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Asp Ile Val Trp Ser Leu Ala Phe Gly Ser Ser Val Pro Glu Lys Gln
108                      113                      118                      123

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Ser Arg Cys Val Asn Ile Glu Trp His Arg Phe Arg Phe Gly Gln Asp
124                      129                      134                      139

cag cta ctt ctt gct aca ggg ttg aac aat ggg cgt atc aaa ata tgg      781
Gln Leu Leu Leu Ala Thr Gly Leu Asn Asn Gly Arg Ile Lys Ile Trp
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gat gta tat aca gga aaa ctc ctc ctt aac ttg gta gat cat act gaa      829
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tca gct tca aga gac aaa act ctc aga gta tgg gac ctg aaa gat gat				925
Ser Ala Ser Arg Asp Lys Thr Leu Arg Val Trp Asp Leu Lys Asp Asp				
188	193	198	203	
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Gly Asn Met Met Lys Val Leu Arg Gly His Gln Asn Trp Val Tyr Ser				
204	209	214	219	
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Cys Ala Phe Ser Pro Asp Ser Ser Met Leu Cys Ser Val Gly Ala Ser				
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aaa gca gtt ttc ctt tgg aat atg gat aaa tac acc atg ata cgg aaa				1069
Lys Ala Val Phe Leu Trp Asn Met Asp Lys Tyr Thr Met Ile Arg Lys				
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cta gaa gga cat cac cat gat gtg gta gct tgt gac ttt tct cct gat				1117
Leu Glu Gly His His His Asp Val Val Ala Cys Asp Phe Ser Pro Asp				
252	257	262	267	
gga gca tta ctg gct act gca tct tat gat act cga gta tat atc tgg				1165
Gly Ala Leu Leu Ala Thr Ala Ser Tyr Asp Thr Arg Val Tyr Ile Trp				
268	273	278	283	
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Asp Pro His Asn Gly Asp Ile Leu Met Glu Phe Gly His Leu Phe Pro				
284	289	294	299	
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Pro Pro Thr Pro Ile Phe Ala Gly Gly Ala Asn Asp Arg Trp Val Arg				
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tct gta tct ttt agc cat gat gga ctg cat gtt gca agc ctt gct gat				1309
Ser Val Ser Phe Ser His Asp Gly Leu His Val Ala Ser Leu Ala Asp				
316	321	326	331	
gat aaa atg gtg agg ttc tgg aga att gat gag gat tat cca gtg caa				1357
Asp Lys Met Val Arg Phe Trp Arg Ile Asp Glu Asp Tyr Pro Val Gln				
332	337	342	347	
gtt gca cct ttg agc aat ggt ctt tgc tgt gcc ttc tct act gat ggc				1405
Val Ala Pro Leu Ser Asn Gly Leu Cys Cys Ala Phe Ser Thr Asp Gly				
348	353	358	363	
agt gtt tta gct gct ggg aca cat gac gga agt gtg tat ttt tgg gcc				1453
Ser Val Leu Ala Ala Gly Thr His Asp Gly Ser Val Tyr Phe Trp Ala				
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Thr Pro Arg Gln Val Pro Ser Leu Gln His Leu Cys Arg Met Ser Ile				
380	385	390	395	

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Gln	Arg	Gly	Met	Arg	Phe	Arg	Tyr	Lys	Cys	Glu	Gly	Arg	Ser	Ala	Gly		
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Ser	Ile	Pro	Gly	Glu	His	Ser	Thr	Asp	Asn	Asn	Arg	Thr	Tyr	Pro	Ser		
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Ile	Gln	Ile	Met	Asn	Tyr	Tyr	Gly	Lys	Gly	Lys	Val	Arg	Ile	Thr	Leu		
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Lys	Asp	Cys	Arg	Asp	Gly	Tyr	Tyr	Glu	Ala	Glu	Phe	Gly	Gln	Glu	Arg		
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Arg	Pro	Leu	Phe	Phe	Gln	Asn	Leu	Gly	Ile	Arg	Cys	Val	Lys	Lys	Lys		
98					103					108					113		
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Glu	Val	Lys	Glu	Ala	Ile	Ile	Thr	Arg	Ile	Lys	Ala	Gly	Ile	Asn	Pro		
114					119					124					129		
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Phe	Asn	Val	Pro	Glu	Lys	Gln	Leu	Asn	Asp	Ile	Glu	Asp	Cys	Asp	Leu		
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Asn	Cys	Gly	Ser	Val	Arg	Gly	Gly	Asp	Glu	Ile	Phe	Leu	Leu	Cys	Asp		
194					199					204					209		
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Lys	Val	Gln	Lys	Asp	Asp	Ile	Glu	Val	Arg	Phe	Val	Leu	Asn	Asp	Trp		
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Glu	Ala	Lys	Gly	Ile	Phe	Ser	Gln	Ala	Asp	Val	His	Arg	Gln	Val	Ala		

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Ile Val Phe Lys Thr Pro Pro Tyr Cys Lys Ala Ile Thr Glu Pro Val				
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Thr Val Lys Met Gln Leu Arg Arg Pro Ser Asp Gln Glu Val Ser Glu				
258	263	268	273	
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Ser Met Asp Phe Arg Tyr Leu Pro Asp Glu Lys Asp Thr Tyr Gly Asn				
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Lys Ala Lys Lys Gln Lys Thr Thr Leu Leu Phe Gln Lys Leu Cys Gln				
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Ile Gly Glu Gly Arg Tyr Phe Lys Lys Glu Pro Asn Leu Phe Ser His				
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Ser Tyr Tyr Pro Ser Pro Gly Pro Ile Ser Ser Gly Leu Ser His His				
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ccc acc cca cgc tca ggc aat aca aac cca ctg agt agt ttt tca aca				1377
Pro Thr Pro Arg Ser Gly Asn Thr Asn Pro Leu Ser Ser Phe Ser Thr				
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197 202 207 212	
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Cys Ser Val Pro Val Asp Gln Ala Ser Glu Ser Leu Leu Lys Ser Lys	
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Gln Thr Thr Glu His Phe Leu Thr Ala Val Ala His Arg Leu Gly Lys	
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Ala Thr His Thr Leu Pro Thr His Leu Ser	Ala Glu Ile Val Lys Glu	
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437	442	447 452
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Thr Asp Pro Leu Glu Met Glu Ile Lys Leu Leu His Ser Pro Met Thr		
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Lys Ile Ala Asp Ala Ile Glu Asn Lys Thr Thr Val Tyr Lys Ile Gly		
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Asp Leu Thr Gly Tyr Cys Thr Asn Pro Asn Arg His Gln Met Gly Trp		
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Ala Lys Arg Asn Val Asp His Arg Pro Lys Ser Asn Ser Met Val Asp		
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Val Cys Ser Val Asp Arg Arg Ser Val Leu Gln Arg Ile Met Glu Thr		
517	522	527 532
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Asp Pro Leu Gln Gln Gly Gln Ala Leu Ala Ser Ala Leu Lys Asn Lys		
533	538	543 548
aag aag atg cag aaa cgt gca gat aaa atc gcc agc aag ctg tct gat		1796
Lys Lys Met Gln Lys Arg Ala Asp Lys Ile Ala Ser Lys Leu Ser Asp		
549	554	559 564
tcc atg atg tct gct ctc gac ctc tct ggc aat gct gat gat ggt gtt		1844
Ser Met Met Ser Ala Leu Asp Leu Ser Gly Asn Ala Asp Asp Gly Val		
565	570	575 580
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Gly Asp *		
581		
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cgtgcgcccc ccagctctaa tctgcgcgt gacaggagc atg atc tgt gcc cag 174
 Met Ile Cys Ala Gln
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gcc agg gct ggc aag aat ctg tac cag aac agg ttt tta ggc ctg gcc 222
 Ala Arg Ala Gly Lys Asn Leu Tyr Gln Asn Arg Phe Leu Gly Leu Ala
 6 11 16 21

gcc atg gcg ttt cct tct aga aac tcc cag agc cta cgc cgg tgc aag 270
 Ala Met Ala Phe Pro Ser Arg Asn Ser Gln Ser Leu Arg Arg Cys Lys
 22 27 32 37

gag ccg atc cga tac agc tac aac ccc gac cag ttc cac aac atg gac 318
 Glu Pro Ile Arg Tyr Ser Tyr Asn Pro Asp Gln Phe His Asn Met Asp
 38 43 48 53

ctc agg ggc ggc ccc cac gat ggc gtc acc att ccc cgc tcc acc agc 366
 Leu Arg Gly Gly Pro His Asp Gly Val Thr Ile Pro Arg Ser Thr Ser
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 Asp Thr Asp Leu Val Thr Ser Asp Ser Arg Ser Thr Leu Met Val Ser
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agc tcc tac tat tcc atc ggg cac tct cag gac ctg gtc atc cac tgg 462
 Ser Ser Tyr Tyr Ser Ile Gly His Ser Gln Asp Leu Val Ile His Trp
 86 91 96 101

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 Asp Ile Lys Glu Glu Val Asp Ala Gly Asp Trp Ile Gly Met Tyr Leu
 102 107 112 117

att gat gag gtc ttg tcc gaa aac ttt ctg gac tat aaa aac cgt gga	558
Ile Asp Glu Val Leu Ser Glu Asn Phe Leu Asp Tyr Lys Asn Arg Gly	
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Val Asn Gly Ser His Arg Gly Gln Ile Ile Trp Lys Ile Asp Ala Ser	
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Ser Tyr Phe Val Glu Pro Glu Thr Lys Ile Cys Phe Lys Tyr Tyr His	
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Gln Ala Met Gly Leu Lys Lys Gly Met Phe Phe Asn Pro Asp Pro Tyr	
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Leu Lys Ile Ser Ile Gln Pro Gly Lys His Ser Ile Phe Pro Ala Leu	
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Asn Pro Ile Trp Gln Ala Glu Gln Phe Ser Phe Val Ser Leu Pro Thr	
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Glu Ile Thr Ser Ser Ile His Pro Asp Asp Glu Glu Ile Ser Leu Ser	
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Thr Glu Pro Glu Ser Ala Gln Ile Gln Asp Ser Pro Met Asn Asn Leu	
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Met Glu Ser Gly Ser Gly Glu Pro Arg Ser Glu Ala Pro Glu Ser Ser	
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Glu Ser Trp Lys Pro Glu Gln Leu Gly Glu Gly Ser Val Pro Asp Arg	
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Pro Gly Asn Gln Ser Ile Glu Leu Ser Arg Pro Ala Glu Glu Ala Ala	
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Val Ile Thr Glu Ala Gly Asp Gln Gly Met Val Ser Val Gly Pro Glu	
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Gly Ala Gly Glu Leu Leu Ala Gln Val Gln Lys Asp Ile Gln Pro Ala	
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Pro Ser Ala Glu Glu Leu Ala Glu Gln Leu Asp Leu Gly Glu Glu Ala	
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Ala Cys Gly Asp Pro Glu Thr Pro Arg Thr His Tyr Ile Arg Ile His	
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Thr Leu Leu His Ser Met Pro Ser Ala Gln Gly Gly Ser Ala Ala Glu	

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Lys Asp Gly Leu Ser Glu Val Asp Thr Val Ala Ala Asp Pro Ser Ala				
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Leu Glu Glu Asp Arg Glu Glu Pro Glu Gly Ala Thr Pro Gly Thr Ala				
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His Pro Gly His Ser Gly Gly His Phe Pro Ser Leu Ala Asn Gly Ala				
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gcc cag gat ggc gac acg cac ccc agc acc ggg agc gag agc gac tcc				2142
Ala Gln Asp Gly Asp Thr His Pro Ser Thr Gly Ser Glu Ser Asp Ser				
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Ser Pro Arg Gln Gly Gly Asp His Ser Cys Glu Gly Cys Asp Ala Ser				
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Cys Cys Ser Pro Ser Cys Tyr Ser Ser Ser Cys Tyr Ser Thr Ser Cys				
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Tyr Ser Ser Ser Cys Tyr Ser Ala Ser Cys Tyr Ser Pro Ser Cys Tyr				
694	699	704	709	
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Asn Gly Asn Arg Phe Ala Ser His Thr Arg Phe Ser Ser Val Asp Ser				
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Ala Lys Ile Ser Glu Ser Thr Val Phe Ser Ser Gln Asp Asp Glu Glu				
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Glu Leu Asp Pro Glu Ser Thr Asn Gly Ala Gly Pro Trp Gln Asp Glu				
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His His His Tyr Pro Thr Ile Asp Glu Pro Leu Pro Pro Asn Trp Glu	
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Ala Arg Ile Asp Ser His Gly Arg Val Phe Tyr Val Asp His Val Asn	
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Arg Arg Glu Gly Ser Leu Ser Pro Val Asn Ser Gln Lys Ile Thr Leu	
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Phe Glu Arg Tyr Gln His Asn Arg Asp Leu Val Asn Phe Ile Asn Met	
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Lys Leu Glu Ala Lys Gly Phe Gly Gln Gly Pro Gly Lys Ile Lys Leu	
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His Leu Val Ile Arg Trp Phe Trp Ala Ala Val Glu Arg Phe Asn Asn				
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Arg	Lys	Lys	Leu	Gln	Leu	Leu	Met	Leu	Gly	Pro	Phe	Gln	Tyr	Ala	Phe		
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Ile	Ile	Ser	Arg	Gln	Ala	Arg	Leu	His	Leu	Gly	Glu	Gln	Asn	Met	Gly		
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Ala	Lys	Phe	Ala	Leu	Phe	Gln	Val	Leu	Leu	Ile	Leu	Thr	Ala	Leu	Gln		
138					143					148					153		
ccc	tcc	atc	ttc	tca	gtc	ttg	gcc	aac	ggt	ggg	cag	att	gct	tgt	tcg	891	
Pro	Ser	Ile	Phe	Ser	Val	Leu	Ala	Asn	Gly	Gly	Gln	Ile	Ala	Cys	Ser		
154					159					164					169		
cct	ccc	tat	tcc	tct	aaa	acc	agg	tct	caa	gtg	atg	aat	tgc	cac	ctc	939	
Pro	Pro	Tyr	Ser	Ser	Lys	Thr	Arg	Ser	Gln	Val	Met	Asn	Cys	His	Leu		
170					175					180					185		
ctc	ata	ctg	gag	act	ttt	cta	atg	act	gtg	ctg	aca	cga	atg	tac	tac	987	
Leu	Ile	Leu	Glu	Thr	Phe	Leu	Met	Thr	Val	Leu	Thr	Arg	Met	Tyr	Tyr		
186					191					196					201		
cga	agg	aaa	gac	cac	aag	gtt	ggg	tat	gaa	act	ttc	tct	tct	cca	gac	1035	
Arg	Arg	Lys	Asp	His	Lys	Val	Gly	Tyr	Glu	Thr	Phe	Ser	Ser	Pro	Asp		
202					207					212					217		
ctg	gac	ttg	aac	ctc	aaa	gcc	taa	ggtggatggc	ttggacaatg	aaaggatgct						1089	
Leu	Asp	Leu	Asn	Leu	Lys	Ala	*										
218					223												
gtactcatta	gaatacaaga	ttcctttact	gtccctcaac	cttgaccaaa	tggaagcat											1149	
tccccctt	gt caacacaagc	tggcagatac	atttgactct	acagatgaag	gtgaacaatg											1209	
ttaggataaa	attgcttttg	atcttgccctg	gaagggtgtt	taagttttgt	aataaacaag											1269	

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 caaggttgta tattgctggc taggtgcgac agctcatgcc tgctatccca gcactttggg 1389
 agcctgagggc gggaggatca cttgagccca ggaggttgag gccgcagtga gcaatgggtg 1449
 tgccatacac tccagcctgg gtgatacagc cagaccctgc ctctggaaaa aaaagaaagc 1509
 ttactgagct ttcctaaagc agatgaaaag aagagtatat agtatt 1555

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 agaagagcta tgacgtgc atg cac gcg tac gta agc ttg gat cct cta gag 112
 Met His Ala Tyr Val Ser Leu Asp Pro Leu Glu
 1 5

cgg ccg cct act act act ata cgg ctg cga gaa gac gac aga agg gcg 160
 Arg Pro Pro Thr Thr Thr Ile Arg Leu Arg Glu Asp Asp Arg Arg Ala
 12 17 22 27

act ctc acc tct cat gtg ctt ctg gcc agt agg tct ttg ttc tgg tcc 208
 Thr Leu Thr Ser His Val Leu Leu Ala Ser Arg Ser Leu Phe Trp Ser
 28 33 38 43

aac gac agg agt agg ctt gta ttt aaa agc ggc ccc tcc tct cct gtg 256
 Asn Asp Arg Ser Arg Leu Val Phe Lys Ser Gly Pro Ser Ser Pro Val
 44 49 54 59

gcc aca gaa cac agg cgt gct tgg att ctt gac aag cag ccc tgc tcc 304
 Ala Thr Glu His Arg Arg Ala Trp Ile Leu Asp Lys Gln Pro Cys Ser
 60 65 70 75

tgc aga gga gac agc cac att tgg aat tgg gca ccg aga aga cct gag 352
 Cys Arg Gly Asp Ser His Ile Trp Asn Trp Ala Pro Arg Arg Pro Glu
 76 81 86 91

aaa aac cca ctc tct ctt ttt ttt ttt gag acg gag tct tgc tct gtc 400
 Lys Asn Pro Leu Ser Leu Phe Phe Phe Glu Thr Glu Ser Cys Ser Val
 92 97 102 107

acc cag gct gga gtg cag tgg cac gat ctc ggc tca ctg caa cct ccg 448
 Thr Gln Ala Gly Val Gln Trp His Asp Leu Gly Ser Leu Gln Pro Pro
 108 113 118 123

cct ccc aag ttc aag caa ttc tcc tgc ccc agc ctc ctg att agc tgg	496
Pro Pro Lys Phe Lys Gln Phe Ser Cys Pro Ser Leu Leu Ile Ser Trp	
124 129 134 139	
gat tac agg cgt gtg cca cca tgc cca gct aat ttt tgt gtt ttt agt	544
Asp Tyr Arg Arg Val Pro Pro Cys Pro Ala Asn Phe Cys Val Phe Ser	
140 145 150 155	
aga gac ggg gtt tca cca tgt tgg tca ggc tgg tct tga actcctgacg	593
Arg Asp Gly Val Ser Pro Cys Trp Ser Gly Trp Ser *	
156 161 166	
tggtgatcca cctgcctcgg cctcccaaag tgctgggatt acaggcgtga gccaccacgc	653
ctggccgaaa aaccactct cataacagaa gtgcagactc attgctagat tcagtgcctt	713
tgagtgtgcc agaggctctc tgtgtttgag acaatcctgt gtgtgccagg aggctccgtg	773
tgcaccaggg gctctcagaa tcccgtttac ccagctggag accatgcctc tggcagcccc	833
atctcagcca gccctgctct ctccctcttc cctccagggtg aggcaaactt cataggaatc	893
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aa	955

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Ile Leu Asn Lys Ala Leu Met Leu Gly Ala Leu Ala Leu Thr Thr Val	
2 7 12 17	
atg agc cct tgt gga ggt gaa gac att gtg gct gac cat gtt gcc tct	154
Met Ser Pro Cys Gly Gly Glu Asp Ile Val Ala Asp His Val Ala Ser	
18 23 28 33	
tac ggt gta aac ttg tac cag tct tat ggt ccc tct ggg cag tac agc	202
Tyr Gly Val Asn Leu Tyr Gln Ser Tyr Gly Pro Ser Gly Gln Tyr Ser	
34 39 44 49	
cat gaa ttt gat gga gac gag gag ttc tat gtg gac ctg gag agg aag	250
His Glu Phe Asp Gly Asp Glu Glu Phe Tyr Val Asp Leu Glu Arg Lys	

50	55	60	65	
gag act gtc tgg cag ttg cct ctg ttc cgc aga ttt aga aga ttt gac				298
Glu Thr Val Trp Gln Leu Pro Leu Phe Arg Arg Phe Arg Arg Phe Asp				
66	71	76	81	
ccg caa ttt gca ctg aca aac atc gct gtg cta aaa cat aac ttg aac				346
Pro Gln Phe Ala Leu Thr Asn Ile Ala Val Leu Lys His Asn Leu Asn				
82	87	92	97	
atc gtg att aaa cgc tcc aac tct acc gct gct acc aat gag gtt cct				394
Ile Val Ile Lys Arg Ser Asn Ser Thr Ala Ala Thr Asn Glu Val Pro				
98	103	108	113	
gag gtc aca gtg ttt tcc aag tct ccc gtg aca ctg ggt cag ccc aac				442
Glu Val Thr Val Phe Ser Lys Ser Pro Val Thr Leu Gly Gln Pro Asn				
114	119	124	129	
acc ctc atc tgt ctt gtg gac aac atc ttt cct cct gtg gtc aac atc				490
Thr Leu Ile Cys Leu Val Asp Asn Ile Phe Pro Pro Val Val Asn Ile				
130	135	140	145	
acc tgg ctg agc aat ggg cac tca gtc aca gaa ggt gtt tct gag acc				538
Thr Trp Leu Ser Asn Gly His Ser Val Thr Glu Gly Val Ser Glu Thr				
146	151	156	161	
agc ttc ctc tcc aag agt gat cat tcc ttc ttc aag atc agt tac ctc				586
Ser Phe Leu Ser Lys Ser Asp His Ser Phe Phe Lys Ile Ser Tyr Leu				
162	167	172	177	
acc ttc ctc cct tct gct gat gag att tat gac tgc aag gtg gag cac				634
Thr Phe Leu Pro Ser Ala Asp Glu Ile Tyr Asp Cys Lys Val Glu His				
178	183	188	193	
tgg ggc ctg gat gag cct ctt ctg aaa cac tgg gag cct gag att cca				682
Trp Gly Leu Asp Glu Pro Leu Leu Lys His Trp Glu Pro Glu Ile Pro				
194	199	204	209	
aca cct atg tca gag ctc aca gag act gtg gtc tgc gcc ctg ggg ttg				730
Thr Pro Met Ser Glu Leu Thr Glu Thr Val Val Cys Ala Leu Gly Leu				
210	215	220	225	
tct gtg ggc ctc gtg ggc att gtg gtg ggg acc gtc ttg atc atc cga				778
Ser Val Gly Leu Val Gly Ile Val Val Gly Thr Val Leu Ile Ile Arg				
226	231	236	241	
ggc ctg cgt tca gtt ggt gct tcc aga cac caa ggg ccc ttg tga atc				826
Gly Leu Arg Ser Val Gly Ala Ser Arg His Gln Gly Pro Leu *				
242	247	252		
ccatcctgaa aaggaaggtg ttacctacta agagatgcct ggggtaagcc gccagctac				886
ctaattcttc agtaacatcg atctaaaatc tccatggaag caataaattc cctttaagag				946
aaaaaaaaaa				956

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (61)..(1338)

<400> 230

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Met Ala Gly Ala Glu Gly Ala Ala Gly Arg Gln Ser Glu Leu Glu Pro
   1             5             10             15

gtg gta tcg ttg gtc gac gtc ctt gag gag gac gag gag ctg gag aat      156
Val Val Ser Leu Val Asp Val Leu Glu Glu Asp Glu Glu Leu Glu Asn
  17             22             27             32

gag gcg tgc gct gtc ctg ggc ggc agc gac tcc gag aag tgc tcc tac      204
Glu Ala Cys Ala Val Leu Gly Gly Ser Asp Ser Glu Lys Cys Ser Tyr
  33             38             43             48

tct cag ggc tca gta aag aga caa gca cta tat gcc tgt agt acc tgc      252
Ser Gln Gly Ser Val Lys Arg Gln Ala Leu Tyr Ala Cys Ser Thr Cys
  49             54             59             64

acc cca gag gga gaa gaa cca gca gga att tgt tta gct tgc agt tat      300
Thr Pro Glu Gly Glu Glu Pro Ala Gly Ile Cys Leu Ala Cys Ser Tyr
  65             70             75             80

gaa tgt cat gga agt cac aaa cta ttt gag cta tac aca aaa aga aat      348
Glu Cys His Gly Ser His Lys Leu Phe Glu Leu Tyr Thr Lys Arg Asn
  81             86             91             96

ttt cgt tgt gat tgt gga aac agc aag ttt aaa aat ttg gaa tgc aaa      396
Phe Arg Cys Asp Cys Gly Asn Ser Lys Phe Lys Asn Leu Glu Cys Lys
  97             102            107            112

tta ctt cct gac aaa gca aag gta aat tct ggc aat aag tac aat gac      444
Leu Leu Pro Asp Lys Ala Lys Val Asn Ser Gly Asn Lys Tyr Asn Asp
 113             118            123            128

aac ttt ttt gga ttg tac tgc att tgc aag aga cct tat cct gat cct      492
Asn Phe Phe Gly Leu Tyr Cys Ile Cys Lys Arg Pro Tyr Pro Asp Pro
 129             134            139            144

gaa gac gag att cca gat gag atg atc cag tgc gta gtc tgt gaa gac      540
Glu Asp Glu Ile Pro Asp Glu Met Ile Gln Cys Val Val Cys Glu Asp
 145             150            155            160

tgg ttc cat gga agg cat ctt ggt gcc att ccc cct gag agt ggg gat      588
Trp Phe His Gly Arg His Leu Gly Ala Ile Pro Pro Glu Ser Gly Asp
 161             166            171            176

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ttt cag gag atg gta tgc cag gcc tgc atg aaa cgt tgt tct ttt ttg	636
Phe Gln Glu Met Val Cys Gln Ala Cys Met Lys Arg Cys Ser Phe Leu	
177 182 187 192	
tggttggttatgctgcaaaattgatggaataggatgagcaggaagttatc	684
Trp Ala Tyr Ala Ala Gln Leu Ala Val Thr Lys Ile Ser Thr Glu Asp	
193 198 203 208	
gatgga ttggtg cgg aac att gat gga ata ggt gat cag gaa gtt atc	732
Asp Gly Leu Val Arg Asn Ile Asp Gly Ile Gly Asp Gln Glu Val Ile	
209 214 219 224	
aaa cct gaa aat gga gag cat caa gat agt acc ctcaaaa gag gat gtt	780
Lys Pro Glu Asn Gly Glu His Gln Asp Ser Thr Leu Lys Glu Asp Val	
225 230 235 240	
cca gaa cag gga aag gat gat gtc cgg gag gtt aaa gta gag cag aac	828
Pro Glu Gln Gly Lys Asp Asp Val Arg Glu Val Lys Val Glu Gln Asn	
241 246 251 256	
agt gaa cca tgt gcc ggc tct agt tct gaa tct gat ctccagaca gtg	876
Ser Glu Pro Cys Ala Gly Ser Ser Ser Glu Ser Asp Leu Gln Thr Val	
257 262 267 272	
ttt aag aat gaa agc ctcaac gca gaa tca aaa tct ggc tgc aaa ctt	924
Phe Lys Asn Glu Ser Leu Asn Ala Glu Ser Lys Ser Gly Cys Lys Leu	
273 278 283 288	
cag gag ctt aaa gct aag cag ctt ata aag aaa gac act gcc acc tat	972
Gln Glu Leu Lys Ala Lys Gln Leu Ile Lys Lys Asp Thr Ala Thr Tyr	
289 294 299 304	
tggtccctg aac ttggcgt agc aag ttgtgt acc tgc caa gac tgt atg	1020
Trp Pro Leu Asn Trp Arg Ser Lys Leu Cys Thr Cys Gln Asp Cys Met	
305 310 315 320	
aaa atg tat gga gat cta gat gtc tta ttc ctg aca gat gaa tac gac	1068
Lys Met Tyr Gly Asp Leu Asp Val Leu Phe Leu Thr Asp Glu Tyr Asp	
321 326 331 336	
aca gtt ctg gct tat gaa aac aaa ggg aag att gcc cag gcc act gac	1116
Thr Val Leu Ala Tyr Glu Asn Lys Gly Lys Ile Ala Gln Ala Thr Asp	
337 342 347 352	
agg agc gat ccc cta atg gat acc ctt agc agc atg aat aga gtc cag	1164
Arg Ser Asp Pro Leu Met Asp Thr Leu Ser Ser Met Asn Arg Val Gln	
353 358 363 368	
caa gtg gaa ctc att tgt gaa tac aat gat ttg aag act gaa ctt aaa	1212
Gln Val Glu Leu Ile Cys Glu Tyr Asn Asp Leu Lys Thr Glu Leu Lys	
369 374 379 384	
gac tat ctc aag aga ttt gct gat gaa ggc acg gtt gtt aag aga gag	1260
Asp Tyr Leu Lys Arg Phe Ala Asp Glu Gly Thr Val Val Lys Arg Glu	
385 390 395 400	

gac att cag cag ttc ttt gaa gag ttt cag tca aaa aag aga aga aga 1308
 Asp Ile Gln Gln Phe Phe Glu Glu Phe Gln Ser Lys Lys Arg Arg Arg
 401 406 411 416

gtg gat ggg atg cag tat tac tgc agc tag a gtggagtatg aagctttctc 1359
 Val Asp Gly Met Gln Tyr Tyr Cys Ser *
 417 422

attcaagcca atgaaaatgc gcttcccatt cttggaataa aagaggtgtg gttcacattt 1419
 ggcccccttt ccgtcctcct ctgtttggag aggccctcgcg ctcccttcat tctcttttagc 1479
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 gtgtcagtca aagcagcctc tgaacttctc atg aaa ctc tca gcg gaa agc 171
 Met Lys Leu Ser Ala Glu Ser
 1 5

tac aag gaa aca cag atg gtg aag att aaa gag gaa ccc atg gag gtt 219
 Tyr Lys Glu Thr Gln Met Val Lys Ile Lys Glu Glu Pro Met Glu Val
 8 13 18 23

gac atc cag gac tcc cat gtc tgc ata tca ccc agc cgg aat gtt ggc 267
 Asp Ile Gln Asp Ser His Val Ser Ile Ser Pro Ser Arg Asn Val Gly
 24 29 34 39

tac agc act tta atc ggg cga gag aaa acc gaa ccc tta cag aag atg 315
 Tyr Ser Thr Leu Ile Gly Arg Glu Lys Thr Glu Pro Leu Gln Lys Met
 40 45 50 55

cca gag ggc aga gta ccc cca gag aga aac ctc ttc agt cag gat atc 363
 Pro Glu Gly Arg Val Pro Pro Glu Arg Asn Leu Phe Ser Gln Asp Ile
 56 61 66 71

tct gtg aaa atg gct tcc gag ctc ctc ttt caa ctg tca gaa aaa gtg	411
Ser Val Lys Met Ala Ser Glu Leu Leu Phe Gln Leu Ser Glu Lys Val	
72 77 82 87	
agc aaa gag cac aat cat aca aaa gaa aac acc atc cgg acc acg acc	459
Ser Lys Glu His Asn His Thr Lys Glu Asn Thr Ile Arg Thr Thr Thr	
88 93 98 103	
agc cct ttc ttt tca gaa gac aca ttt aga caa tca cca ttc acc tcc	507
Ser Pro Phe Phe Ser Glu Asp Thr Phe Arg Gln Ser Pro Phe Thr Ser	
104 109 114 119	
aat tca aaa gaa ctg ctg ccc agt gac tcc gtg ctg cac gga aga ata	555
Asn Ser Lys Glu Leu Leu Pro Ser Asp Ser Val Leu His Gly Arg Ile	
120 125 130 135	
tca gct cca gaa aca gaa aag ata gtc cta gag gca gga aat gga tta	603
Ser Ala Pro Glu Thr Glu Lys Ile Val Leu Glu Ala Gly Asn Gly Leu	
136 141 146 151	
cca tcc tgg aaa ttc aat gac cag ctt ttt ccc tgt gac gtg tgt ggg	651
Pro Ser Trp Lys Phe Asn Asp Gln Leu Phe Pro Cys Asp Val Cys Gly	
152 157 162 167	
aaa gtg ttt ggc cga cag cag aca ttg tcc cga cac ctc tcg ctg cac	699
Lys Val Phe Gly Arg Gln Gln Thr Leu Ser Arg His Leu Ser Leu His	
168 173 178 183	
aca gag gaa aga aaa tac aaa tgc cac ttg tgc ccc tat gct gct aag	747
Thr Glu Glu Arg Lys Tyr Lys Cys His Leu Cys Pro Tyr Ala Ala Lys	
184 189 194 199	
tgc cgt gca aat ctg aac cag cac ttg acc gtc cat tcc gtg aag ctg	795
Cys Arg Ala Asn Leu Asn Gln His Leu Thr Val His Ser Val Lys Leu	
200 205 210 215	
gtg agt aca gac acc gag gac att gtc agc gcc gtc acc tct gaa ggc	843
Val Ser Thr Asp Thr Glu Asp Ile Val Ser Ala Val Thr Ser Glu Gly	
216 221 226 231	
agt gat ggg aag aaa cat cct tat tat tac agt tgt cac gtg tgt gga	891
Ser Asp Gly Lys Lys His Pro Tyr Tyr Tyr Ser Cys His Val Cys Gly	
232 237 242 247	
ttt gag acc gag ctc aat gtc cag ttt gtc agc cac atg tca ctc cac	939
Phe Glu Thr Glu Leu Asn Val Gln Phe Val Ser His Met Ser Leu His	
248 253 258 263	
gtg gac aag gag cag tgg atg ttt tcg atc tgc tgc act gcc tgc gac	987
Val Asp Lys Glu Gln Trp Met Phe Ser Ile Cys Cys Thr Ala Cys Asp	
264 269 274 279	
ttc gtc acc atg gag gaa gca gag ata aag act cac att ggc acc aag	1035
Phe Val Thr Met Glu Glu Ala Glu Ile Lys Thr His Ile Gly Thr Lys	
280 285 / 290 295	
cac aca ggg gaa gac agg aag acc ccc agc gaa tca aat agc ccc tct	1083

His Thr Gly Glu Asp Arg Lys Thr Pro Ser Glu Ser Asn Ser Pro Ser	
296 301 306 311	
tca tcc tcc ctc tca gct ctg agt gat tca gcc aac agc aaa gat gat	1131
Ser Ser Ser Leu Ser Ala Leu Ser Asp Ser Ala Asn Ser Lys Asp Asp	
312 317 322 327	
tca gat ggc tcc cag aaa aac aag ggc ggg aac aat ctg ctg gtc atc	1179
Ser Asp Gly Ser Gln Lys Asn Lys Gly Gly Asn Asn Leu Leu Val Ile	
328 333 338 343	
tct gtc atg cct ggg agc cag ccc tca ctg aac agt gag gaa aag cca	1227
Ser Val Met Pro Gly Ser Gln Pro Ser Leu Asn Ser Glu Glu Lys Pro	
344 349 354 359	
gag aaa ggg ttc gaa tgt gtt ttt tgc aac ttt gtc tgc aag acg aag	1275
Glu Lys Gly Phe Glu Cys Val Phe Cys Asn Phe Val Cys Lys Thr Lys	
360 365 370 375	
aac atg ttt gag cgt cat ctg cag ata cac ctc atc acc cgg atg ttt	1323
Asn Met Phe Glu Arg His Leu Gln Ile His Leu Ile Thr Arg Met Phe	
376 381 386 391	
gag tgt gat gtg tgc cac aag ttc atg aag acc ccc gaa cag ctg ctg	1371
Glu Cys Asp Val Cys His Lys Phe Met Lys Thr Pro Glu Gln Leu Leu	
392 397 402 407	
gag cat aag aaa tgc cac act gtc ccc acc ggt ggg ctc aat tta tgt	1419
Glu His Lys Lys Cys His Thr Val Pro Thr Gly Gly Leu Asn Leu Cys	
408 413 418 423	
tct agg atg acc aag tag aagaat actttgaaaa aattgataat gccttctggc	1473
Ser Arg Met Thr Lys *	
424 429	
tatacagtgc ccattctgca ttattccac caaccgcccc gctgccatgg agtgccacct	1533
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aaagccacta gatcagcaat tctgaccctt gtgaccacag agttcccatc cacgcggctg	180

acgacatgac cagacaagtt cgggggttca gagcatctcc atcccccttt tggggactca 240

gagcgtctcc atcccacttt tggggattca gagcatcttg gtgaaacctc gggggctcag 300

agctcccacc tgaagaagcc ctctttattc aggtggcctc c atg aac cag cgc 353
Met Asn Gln Arg

1

cgt gtg gat ttc tac ctt gcc tcc atc gaa gac atg ctg gtg gcc atc 401
Arg Val Asp Phe Tyr Leu Ala Ser Ile Glu Asp Met Leu Val Ala Ile
5 10 15 20

ggc ggc cgg aat gag aac gga gcg ctc tct tca gta gag acg tac agt 449
Gly Gly Arg Asn Glu Asn Gly Ala Leu Ser Ser Val Glu Thr Tyr Ser
21 26 31 36

ccc aag act gac tcc tgg tcc tat gtg gcc ggc ttg cca agg ttc acg 497
Pro Lys Thr Asp Ser Trp Ser Tyr Val Ala Gly Leu Pro Arg Phe Thr
37 42 47 52

tac ggc cac gcg ggc acc atc tac aaa gac ttc gtg tac atc tcg ggg 545
Tyr Gly His Ala Gly Thr Ile Tyr Lys Asp Phe Val Tyr Ile Ser Gly
53 58 63 68

ggc cac gac tac caa att ggc ccc tac cgc aag aac ctg cta tgc tac 593
Gly His Asp Tyr Gln Ile Gly Pro Tyr Arg Lys Asn Leu Leu Cys Tyr
69 74 79 84

gac cac cgg aca gac gtg tgg gag gag cgg cgg ccc atg acc acg gcg 641
Asp His Arg Thr Asp Val Trp Glu Glu Arg Arg Pro Met Thr Thr Ala
85 90 95 100

cgc ggc tgg cac agc atg tgc agc ctg ggt gac agc atc tac tcc atc 689
Arg Gly Trp His Ser Met Cys Ser Leu Gly Asp Ser Ile Tyr Ser Ile
101 106 111 116

ggg ggc agc gat gac aac atc gag tcc atg gag cgc ttc gac gtg ctg 737
Gly Gly Ser Asp Asp Asn Ile Glu Ser Met Glu Arg Phe Asp Val Leu
117 122 127 132

ggc gtg gag gcc tac agc ccg cag tgc aac cag tgg acc cgc gtg gcg 785
Gly Val Glu Ala Tyr Ser Pro Gln Cys Asn Gln Trp Thr Arg Val Ala
133 138 143 148

ccg ctg ctg cac gcc aac agc gag tcg ggc gtg gca gtg tgg gag ggc 833
Pro Leu Leu His Ala Asn Ser Glu Ser Gly Val Ala Val Trp Glu Gly
149 154 159 164

cgc atc tac atc ctg ggc ggc tac agc tgg gag aac act gcc ttc tcc 881
Arg Ile Tyr Ile Leu Gly Gly Tyr Ser Trp Glu Asn Thr Ala Phe Ser
165 170 175 180

aag acc gtg cag gtg tac gac cgc gag gcc gac aag tgg agc agg ggc 929
Lys Thr Val Gln Val Tyr Asp Arg Glu Ala Asp Lys Trp Ser Arg Gly
181 186 191 196

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gtc gac ctg ccc aag gcc atc gct ggc ggg tcc gcc tgt gtc tgc gcc      977
Val Asp Leu Pro Lys Ala Ile Ala Gly Gly Ser Ala Cys Val Cys Ala
197                202                207                212

ctg gag cca cgg cca gag gac aag aag aag aaa ggc aaa ggc aag agg      1025
Leu Glu Pro Arg Pro Glu Asp Lys Lys Lys Lys Gly Lys Gly Lys Arg
213                218                223                228

cac cag gac cgg ggc cag tga cc ctagctgcgc ctcttgggac catcctcacc      1078
His Gln Asp Arg Gly Gln *
229                234

gtcacctccc agggctctgt agaccagcag caacttctta gtattccgga aacattatgt      1138
acaacttagc agcttttttt acttttatga ttattggtat ttctatgata tcacagtaac      1198
caattaaata ctatctgtaa ctttaaaaaa aaaaaa                                1234

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<210> 233
<211> 3542
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(3168)

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<400> 233
atg gag gcg gag gcg gcg gca gct cct gag cgg gaa ggc ggg agc tgc      48
Met Glu Ala Glu Ala Ala Ala Pro Glu Arg Glu Gly Gly Ser Cys
1                5                10

gtg ctg tgc tgc gga gac ctg gag gcc acg gcg ctg ggg ccg ctg cga      96
Val Leu Cys Cys Gly Asp Leu Glu Ala Thr Ala Leu Gly Pro Leu Arg
17                22                27                32

cca ccc ggt gtg cta ccg ctg ctc tac caa gat gcg ggt gct ctg cga      144
Pro Pro Gly Val Leu Pro Leu Leu Tyr Gln Asp Ala Gly Ala Leu Arg
33                38                43                48

gca gcg cta ctg cgc cgt gtg ccg cga gga gct gcg cca gct gct ggc      192
Ala Ala Leu Leu Arg Arg Val Pro Arg Gly Ala Ala Pro Ala Ala Gly
49                54                59                64

tgt ggg cac ctg gct gga gcc cgt tgg ttt gct gag ctt aga gat ttg      240
Cys Gly His Leu Ala Gly Ala Arg Trp Phe Ala Glu Leu Arg Asp Leu
65                70                75                80

ttt gct tcc agc att gtg aaa ttc ccc cgg ttt gtt cat aga agg ctt      288
Phe Ala Ser Ser Ile Val Lys Phe Pro Arg Phe Val His Arg Arg Leu
81                86                91                96

cgg ctg gtg aca tct gcc agg aat cta act ttc ttc tcc cca gaa gtg      336
Arg Leu Val Thr Ser Ala Arg Asn Leu Thr Phe Phe Ser Pro Glu Val

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97	102	107	112	
atg cag agc agt att gag gca gac act ggc ttc ctc gcc cgc ctg cct				384
Met Gln Ser Ser Ile Glu Ala Asp Thr Gly Phe Leu Ala Arg Leu Pro				
113	118	123	128	
gct gct tcg gga gct gtg gtg ggg aag tgg ccc tgt ctg gtt ccc ggg				432
Ala Ala Ser Gly Ala Val Val Gly Lys Trp Pro Cys Leu Val Pro Gly				
129	134	139	144	
agt cca ggt act cag ctc ccc gag gag gct cgc gct ctg cgt ccc agc				480
Ser Pro Gly Thr Gln Leu Pro Glu Glu Ala Arg Ala Leu Arg Pro Ser				
145	150	155	160	
agc acc ctg agt ggc tcc gct cag ctc ccc gag gag gct cgt gct ctg				528
Ser Thr Leu Ser Gly Ser Ala Gln Leu Pro Glu Glu Ala Arg Ala Leu				
161	166	171	176	
ggt ccc agc agc acc ctg agt ggc tgc aca gat tgc gcc tgt gag ggt				576
Gly Pro Ser Ser Thr Leu Ser Gly Cys Thr Asp Cys Ala Cys Glu Gly				
177	182	187	192	
cgg gct gga gag gcg ccc ttg gga gtg gtc ttt ggg aag aag ctt cct				624
Arg Ala Gly Glu Ala Pro Leu Gly Val Val Phe Gly Lys Lys Leu Pro				
193	198	203	208	
gcc ttt gcc acc atc ccc atc cac cag ctg cag cat gag aag aaa tat				672
Ala Phe Ala Thr Ile Pro Ile His Gln Leu Gln His Glu Lys Lys Tyr				
209	214	219	224	
gat atc tac ttt gca gat gga aag gtg tac gca ttg tac agg cag ctg				720
Asp Ile Tyr Phe Ala Asp Gly Lys Val Tyr Ala Leu Tyr Arg Gln Leu				
225	230	235	240	
ctg cag cac gag tgc ccg cgg tgc ccc gag ctg cca cct ttc agc ctc				768
Leu Gln His Glu Cys Pro Arg Cys Pro Glu Leu Pro Pro Phe Ser Leu				
241	246	251	256	
ttc ggg gac ctg gag cag cac atg cgg agg cag cat gag ctc ttc tgc				816
Phe Gly Asp Leu Glu Gln His Met Arg Arg Gln His Glu Leu Phe Cys				
257	262	267	272	
tgc cgt ctg tgc ctc cag cac ctc cag atc ttc aca tat gag cgc aag				864
Cys Arg Leu Cys Leu Gln His Leu Gln Ile Phe Thr Tyr Glu Arg Lys				
273	278	283	288	
tgg tac tcg cgc aag gac ctg gcc cgg cat cgc atg cag ggt gac ccc				912
Trp Tyr Ser Arg Lys Asp Leu Ala Arg His Arg Met Gln Gly Asp Pro				
289	294	299	304	
gat gac acg tcg cac cgt ggg cac ccg ctc tgc aag ttc tgt gac gag				960
Asp Asp Thr Ser His Arg Gly His Pro Leu Cys Lys Phe Cys Asp Glu				
305	310	315	320	
cgc tac ctg gac aat gat gag ctg ctt aag cac ctg cgc cgc gac cac				1008
Arg Tyr Leu Asp Asn Asp Glu Leu Leu Lys His Leu Arg Arg Asp His				
321	326	331	336	

tac ttc tgc cac ttc tgc gac tcg gac ggg gcc cag gac tac tac agc	1056
Tyr Phe Cys His Phe Cys Asp Ser Asp Gly Ala Gln Asp Tyr Tyr Ser	
337 342 347 352	
gac tat gcc tac ctg cgt gag cac ttc cgg gag aag cac ttt ctg tgt	1104
Asp Tyr Ala Tyr Leu Arg Glu His Phe Arg Glu Lys His Phe Leu Cys	
353 358 363 368	
gag gaa ggc cgc tgc agc acg gag cag ttc acc cac gcc ttc cgc acc	1152
Glu Glu Gly Arg Cys Ser Thr Glu Gln Phe Thr His Ala Phe Arg Thr	
369 374 379 384	
gag atc gac ctc aag gcc cac agg acg gcc tgc cac ⁴ agt cgc agc cgc	1200
Glu Ile Asp Leu Lys Ala His Arg Thr Ala Cys His Ser Arg Ser Arg	
385 390 395 400	
gcc gag gca cgc cag aac cgc cac atc gac ctg cag ttc agc tac gcg	1248
Ala Glu Ala Arg Gln Asn Arg His Ile Asp Leu Gln Phe Ser Tyr Ala	
401 406 411 416	
cca cgg cac tcg cgc cgg aac gag ggt gag cag gca cct ggc ctg gat	1296
Pro Arg His Ser Arg Arg Asn Glu Gly Glu Gln Ala Pro Gly Leu Asp	
417 422 427 432	
gcc ccc agg cct gtt cct cct att gtc gtc ccg ggg tcc cgg gaa gtg	1344
Ala Pro Arg Pro Val Pro Pro Ile Val Val Pro Gly Ser Arg Glu Val	
433 438 443 448	
acg ggc tgt ctg ctg gcc gca ggg gtc gtt ggt ggc gaa gac tac gag	1392
Thr Gly Cys Leu Leu Ala Ala Gly Val Val Gly Gly Glu Asp Tyr Glu	
449 454 459 464	
gag gtg gac agg tac agc cgc cag ggc cga gtg gcc cgg gct ggc act	1440
Glu Val Asp Arg Tyr Ser Arg Gln Gly Arg Val Ala Arg Ala Gly Thr	
465 470 475 480	
cgc gga gcc cag cag agc cgc cga gga agc tgg agg tac aaa agg gaa	1488
Arg Gly Ala Gln Gln Ser Arg Arg Gly Ser Trp Arg Tyr Lys Arg Glu	
481 486 491 496	
gaa gag gac cga gaa gta gca gct gct gtc cgg gcc tcc gtg gcc gca	1536
Glu Glu Asp Arg Glu Val Ala Ala Ala Val Arg Ala Ser Val Ala Ala	
497 502 507 512	
cag cag cag gag gag gct cgc agg agt gag gat cag gag gaa ggc ggt	1584
Gln Gln Gln Glu Glu Ala Arg Arg Ser Glu Asp Gln Glu Glu Gly Gly	
513 518 523 528	
agg ccc aag aag gag gag gca gcg gcg cgg gga cct gag gat ccc cgt	1632
Arg Pro Lys Lys Glu Glu Ala Ala Ala Arg Gly Pro Glu Asp Pro Arg	
529 534 539 544	
ggc ccc cgg cgc tca ccc cgg act cag ggc gaa ggc cca ggc ccc aag	1680
Gly Pro Arg Arg Ser Pro Arg Thr Gln Gly Glu Gly Pro Gly Pro Lys	
545 550 555 560	

gaa acc tcg aca aat ggt cct gta agc caa gaa gcc ttc tcg gtg aca Glu Thr Ser Thr Asn Gly Pro Val Ser Gln Glu Ala Phe Ser Val Thr 561 566 571 576	1728
ggc cca gcc gcc cca ggc gcc ctc cca cca ccc agc ccg aag ctc aag Gly Pro Ala Ala Pro Gly Ala Leu Pro Pro Pro Ser Pro Lys Leu Lys 577 582 587 592	1776
gac gaa gac ttc ccc agc ctc tct gcc tcc act tcc tcc tcc tgc tcc Asp Glu Asp Phe Pro Ser Leu Ser Ala Ser Thr Ser Ser Ser Cys Ser 593 598 603 608	1824
act gca gca acc ccg ggc cct gtg ggg ttg gcg ctg ccg tac gcc atc Thr Ala Ala Thr Pro Gly Pro Val Gly Leu Ala Leu Pro Tyr Ala Ile 609 614 619 624	1872
cct gcc aga ggc agg agt gcc ttc cag gag gag gac ttc ccc gcc ctg Pro Ala Arg Gly Arg Ser Ala Phe Gln Glu Glu Asp Phe Pro Ala Leu 625 630 635 640	1920
gtg tcc tcg gtg ccc aag cct ggc acc gcc ccc acc agc ctt gtc tct Val Ser Ser Val Pro Lys Pro Gly Thr Ala Pro Thr Ser Leu Val Ser 641 646 651 656	1968
gcc tgg aac agc agc agt agc agc aag aag gta gca cag ccc cca ctc Ala Trp Asn Ser Ser Ser Ser Ser Lys Lys Val Ala Gln Pro Pro Leu 657 662 667 672	2016
tcg gcg cag gct acc ggc agc ggc cag ccc acc agg aag gct ggg aag Ser Ala Gln Ala Thr Gly Ser Gly Gln Pro Thr Arg Lys Ala Gly Lys 673 678 683 688	2064
ggg agc agg ggc ggc agg aag ggc ggc ccg ccc ttc aca cag gag gag Gly Ser Arg Gly Gly Arg Lys Gly Gly Pro Pro Phe Thr Gln Glu Glu 689 694 699 704	2112
gag gag gac ggc ggc ccg gcc ctg cag gag ctt ctg agc aca cgc ccc Glu Glu Asp Gly Gly Pro Ala Leu Gln Glu Leu Leu Ser Thr Arg Pro 705 710 715 720	2160
acg ggc tcc gtc tcc tcc aca ctg ggg ctg gcc tcc atc caa ccc tct Thr Gly Ser Val Ser Ser Thr Leu Gly Leu Ala Ser Ile Gln Pro Ser 721 726 731 736	2208
aaa gtt ggg aag aag aag aaa gtg ggc tcg gag aag cca ggc acc aca Lys Val Gly Lys Lys Lys Lys Val Gly Ser Glu Lys Pro Gly Thr Thr 737 742 747 752	2256
ttg cca cag ccc ccg ccc gct acc tgt ccc cca ggg gct ttg cag gcc Leu Pro Gln Pro Pro Pro Ala Thr Cys Pro Pro Gly Ala Leu Gln Ala 753 758 763 768	2304
ccg gaa gct cct gcc agc aga gcc gag ggg cca gtt gcc gtc gtc gtt Pro Glu Ala Pro Ala Ser Arg Ala Glu Gly Pro Val Ala Val Val Val 769 774 779 784	2352
aat gga cac acg gag ggc ccg gcc cct gct cgg agt gcc ccc aag gaa	2400

1009	1014	1019	1024	
ctc gcg cat ggc gat gcc agc agc cac cag gcg ctg cat gct gcc cgg				3120
Leu Ala His Gly Asp Ala Ser Ser His Gln Ala Leu His Ala Ala Arg				
1025	1030	1035	1040	
gac gac gac ttc ccc tcc ctg caa gcc atc gcc agg atc atc acg tag				3168
Asp Asp Asp Phe Pro Ser Leu Gln Ala Ile Ala Arg Ile Ile Thr *				
1041	1046	1051	1056	
ctcccgccag cgtggccaga gctgtcgcac cgtgagcgtc cttcctcctt cctctccggg				3228
ctgccaggca gccaggtaag gcctgatttg ggccctccca aagctgaggg ctgcagcccg				3288
tggggcctca gagctgaaag ctgcggcgcc actggtgccca gagtcagatg tcacagatgt				3348
gttgtgtaaa cagttggctg tttcatgctt caagaatgtt caggattaaa agcagacaag				3408
aaattgtgct acttgaagtt gaatcttttt atgagacaag ctgaatctgg gatctcaa				3468
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aaaaaaaaaaaa				3542

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (293)..(571)

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ttacctcaca taattcctgc cttaaaatgt ttaaaagtag gaaaagccct ttgtttgggg	120
ctcagacttt ctggacatat gtccagctgg gccagtgatg accttaatag actctcctga	180
accttttttg gtctctccag tctttgattg tcctgtaaca tttctggggg cttatccggg	240
attggagatg gcagattttc tgtcttcttt gcctgtgggc tagagcccca gg	295
	atg
	Met
	1
tgg gag atc tgg ggt cct tgg cac cgc tgg gag agt ttc agc ctg gaa	343
Trp Glu Ile Trp Gly Pro Trp His Arg Trp Glu Ser Phe Ser Leu Glu	
2 7 12 17	
gga gaa tgg ccc tcc cgc att cca gag cct tcc cct gac agc acc aaa	391
Gly Glu Trp Pro Ser Arg Ile Pro Glu Pro Ser Pro Asp Ser Thr Lys	
18 23 28 33	

gga acc agt gga aag ggt tgc agg aca gtc aca gga gca gtg cac aga	439
Gly Thr Ser Gly Lys Gly Cys Arg Thr Val Thr Gly Ala Val His Arg	
34 39 44 49	

cat ctg aac cat gtt gca ggt atc ata cct tgg gtt ctt cat agc cag	487
His Leu Asn His Val Ala Gly Ile Ile Pro Trp Val Leu His Ser Gln	
50 55 60 65	

ctg aaa cca aca gca gcc act gcc cag gac cag tgg acc agt caa caa	535
Leu Lys Pro Thr Ala Ala Thr Ala Gln Asp Gln Trp Thr Ser Gln Gln	
66 71 76 81	

tac cca gac cac cca aca cgg ctg atc cta cag tga aatc aagccactgc	585
Tyr Pro Asp His Pro Thr Arg Leu Ile Leu Gln *	
82 87 92	

tgacaagaac aactgaacaa ctgccctgct ccaaccacac cagaggctgg gtcagtccac	645
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gcatggctga agcttaagga aacatcgagc cc	677
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 <211> 1789
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (706) .. (966)

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tggagaagtt atatgcactt gctgggtatg actacaggac tggcatttac ggattgttta	180
tagaggctctg ggcattgggt tatggtttgg gatttgactg tcacttgaca gccacggccg	240
ctgtgaatga cagaaatgag gttcttgacc cttccttacc ggtcagctgt atgcagtgtg	300
gtgggtattgt cctagatggt ttgcataaca gacctgtcat catacagatg aggaaactga	360
ggctcagaaa ggctaagccg cttaaccaga agtcacatag ctactaagac caagttaggt	420
tttgaatcta gacttctgac tcctaagctc accagatctt aacctacttg gaaccactg	480
cttggtagtg aattataata aaatattaac tgtgtttcta accaaatcag tgcttgagat	540
ttaaaaattc atacacacgc ctcaaacctc cagattctga aacgacttct ttgggattaa	600
agaagtgtat gtttctagaa gactgcggaa aacatcattt ctttggctgt gactttcttg	660
gagcaggcag tggtagcaa ggagtgtgtc cccgtggacc agttc atg gag cac	714
	Met Glu His

ctg ctt ccc agc ctc ctg agc ctc gca tca gat cct gtg ccc aac gtg	762
Leu Leu Pro Ser Leu Leu Ser Leu Ala Ser Asp Pro Val Pro Asn Val	
4 9 14 19	
agg gtt ctg cta gcc aag gcc cta agg cag atg ctg ttg gaa aag gcg	810
Arg Val Leu Leu Ala Lys Ala Leu Arg Gln Met Leu Leu Glu Lys Ala	
20 25 30 35	
tat ttt aga aat gct ggt aac cct cat ctt gaa gtc att gaa gag acc	858
Tyr Phe Arg Asn Ala Gly Asn Pro His Leu Glu Val Ile Glu Glu Thr	
36 41 46 51	
atc tta gca ttg cag tca gac cgg gac caa gat gtt tcc ttt ttt gca	906
Ile Leu Ala Leu Gln Ser Asp Arg Asp Gln Asp Val Ser Phe Phe Ala	
52 57 62 67	
gcc cta gaa cca aag cgg cgg aat atc ata gac act gct gta cta gaa	954
Ala Leu Glu Pro Lys Arg Arg Asn Ile Ile Asp Thr Ala Val Leu Glu	
68 73 78 83	
aaa cag aat taa cta cttccgtgat gagttgcaat ctgattattt catgcttggc	1009
Lys Gln Asn *	
84	
acatatggct taccataact tgaaggggaa ctgattgtat tataccagct gggggagatt	1069
ttggaacctt tcatactatg cactcagtga ttgacgcctt ttccatctgt accccgaagg	1129
gactgaacct gatgggggct ttttctggat ggctgggcca tcctgatcaa gcctgatcag	1189
taagtctgtg gaaagattgc agaccaggtg gctaactggg cactggagcc tctgaacat	1249
caggctgtct gccagcaagt tcttttctcc atggcagact gtatgatctg aagtcccccc	1309
aaccctctcc aagtaaagta gtttattaga agctcttaag tctttaatag acctgcatat	1369
ttccttcctt tatgatttcc tataaaatat agtttatggg gttatatttt taactgaaat	1429
actgtacata tgtaaataac tcttgacagg aagaaaatat attaattgtag tatttgcccc	1489
ctatcagtga gctgaacaaa tacatcattt aaatctatgc tgcactttga gttgctacaa	1549
atatggttcg atttgtttat ttttgaaaaa tgtgataaag aaatctaaag aatgattgat	1609
ggcagtcttt ctaatatattgt gcctttgtta taaactactt ggaacttttc ctcaggcact	1669
cactcctccc tgcctgacag gaactgtttc catgaagata tgtggtggcc tttgatagag	1729
gcataaagct gaaagatttt tcatttttat atggatatgc tgtcatatgt ttaagaactg	1789

<210> 236

<211> 1935

<212> DNA
 <213> Homo sapiens

<220>
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 <222> (175)..(1872)

<400> 236

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gggcgctgcg gccgcggccg gggcgggcgc agggccgagc ggacggggggg gcgcggggccc      120
cccgggagggc cgcggccact cccccccggg ccggcgcggc gggggaggcg gagg  atg      177
                                     Met
                                     1

gaa aca ccc ttc tac ggc gat gag gcg ctg agc ggc ctg ggc ggc ggc      225
Glu Thr Pro Phe Tyr Gly Asp Glu Ala Leu Ser Gly Leu Gly Gly Gly
  2              7              12              17

gcc agt ggc agc ggc ggc agc ttc gcg tcc ccg ggc cgc ttg ttc ccc      273
Ala Ser Gly Ser Gly Gly Ser Phe Ala Ser Pro Gly Arg Leu Phe Pro
  18              23              28              33

ggg gcg ccc ccg acg gcc gcg gcc ggc agc atg atg aag aag gac gcg      321
Gly Ala Pro Pro Thr Ala Ala Ala Gly Ser Met Met Lys Lys Asp Ala
  34              39              44              49

ctg acg ctg agc ctg agt gag cag gtg gcg gca gcg ctc aag cct gcg      369
Leu Thr Leu Ser Leu Ser Glu Gln Val Ala Ala Ala Leu Lys Pro Ala
  50              55              60              65

gcc gcg ccc gcc tcc tac ccc cct gcg cgc cga cgg cgc ccc cag cgc      417
Ala Ala Pro Ala Ser Tyr Pro Pro Ala Arg Arg Arg Arg Pro Gln Arg
  66              71              76              81

ggc acc ccc cga cgg cct gct cgc ctc tcc cga cct ggg gct gct gaa      465
Gly Thr Pro Arg Arg Pro Ala Arg Leu Ser Arg Pro Gly Ala Ala Glu
  82              87              92              97

gct ggc ctc ccc cga gct cga gcg cct cat cat cca gtc caa cgg gct      513
Ala Gly Leu Pro Arg Ala Arg Ala Pro His His Pro Val Gln Arg Ala
  98              103              108              113

ggt cac cac cac gcc gac gag ctc aca gtt cct cta ccc caa ggt ggc      561
Gly His His His Ala Asp Glu Leu Thr Val Pro Leu Pro Gln Gly Gly
  114              119              124              129

ggc cag cga gga gca gga gtt cgc cga ggg ctt cgt caa ggc cct gga      609
Gly Gln Arg Gly Ala Gly Val Arg Arg Gly Leu Arg Gln Gly Pro Gly
  130              135              140              145

gga ttt aca caa gca gaa cca gct cgg cgc ggg cgc ggc cgc tgc cgc      657
Gly Phe Thr Gln Ala Glu Pro Ala Arg Arg Gly Arg Gly Arg Cys Arg
  146              151              156              161

cgc cgc cgc cgc cgc cgg ggg gcc ctc ggg cac ggc cac ggg ctc cgc      705

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Arg Arg Arg Arg Arg Arg Gly Ala Leu Gly His Gly His Gly Leu Arg	
162 167 172 177	
gcc ccc cgg cga gct ggc ccc ggc ggc ggc cgc gcc cga agc gcc tgt	753
Ala Pro Arg Arg Ala Gly Pro Gly Gly Gly Arg Ala Arg Ser Ala Cys	
178 183 188 193	
cta cgc gaa cct gag cag cta cgc ggg cgg cgc cgg ggg cgc ggg ggg	801
Leu Arg Glu Pro Glu Gln Leu Arg Gly Arg Arg Arg Gly Arg Gly Gly	
194 199 204 209	
cgc cgc gac ggt cgc ctt cgc tgc cga acc tgt gcc ctt ccc gcc gcc	849
Arg Arg Asp Gly Arg Leu Arg Cys Arg Thr Cys Ala Leu Pro Ala Ala	
210 215 220 225	
gcc acc ccc agg cgc gtt ggg gcc gcc gcg cct ggc tgc gct caa gga	897
Ala Thr Pro Arg Arg Val Gly Ala Ala Ala Pro Gly Cys Ala Gln Gly	
226 231 236 241	
cga gcc aca gac ggt gcc cga cgt gcc gag ctt cgg cga gag ccc gcc	945
Arg Ala Thr Asp Gly Ala Arg Arg Ala Glu Leu Arg Arg Glu Pro Ala	
242 247 252 257	
gtt gtc gcc cat cga cat gga cac gca gga gcg cat caa ggc gga gcg	993
Val Val Ala His Arg His Gly His Ala Gly Ala His Gln Gly Gly Ala	
258 263 268 273	
caa gcg gct gcg caa ccg cat cgc cgc ctc caa gtg ccg caa gcg caa	1041
Gln Ala Ala Ala Gln Pro His Arg Arg Leu Gln Val Pro Gln Ala Gln	
274 279 284 289	
gct gga gcg cat ctc gcg cct gga aga gaa agt gaa gac cct caa gag	1089
Ala Gly Ala His Leu Ala Pro Gly Arg Glu Ser Glu Asp Pro Gln Glu	
290 295 300 305	
tca gaa cac gga gct ggc gtc cac ggc gag cct gct gcg cga gca ggt	1137
Ser Glu His Gly Ala Gly Val His Gly Glu Pro Ala Ala Arg Ala Gly	
306 311 316 321	
ggc gca gct caa gca gaa agt cct cag cca cgt caa cag cgg ctg cca	1185
Gly Ala Ala Gln Ala Glu Ser Pro Gln Pro Arg Gln Gln Arg Leu Pro	
322 327 332 337	
gct gct gcc cca gca cca ggt gcc cgc gta ctg agt ccg cgc gcg ggg	1233
Ala Ala Ala Pro Ala Pro Gly Ala Arg Val Leu Ser Pro Arg Ala Gly	
338 343 348 353	
cgc atg cgc ggc cac cct ccc caa ggg gcg ggc tcg cgg ggg ggt gtc	1281
Arg Met Arg Gly His Pro Pro Gln Gly Ala Gly Ser Arg Gly Gly Val	
354 359 364 369	
gtg ggc gcc ccg gac ttg gag agg gtg cgg ccc tgg gga ccc ccc cct	1329
Val Gly Ala Pro Asp Leu Glu Arg Val Arg Pro Trp Gly Pro Pro Pro	
370 375 380 385	
ccc cga gtg tgc cca gga act cag aga ggg cgc ggc ccc cgg gga ttc	1377
Pro Arg Val Cys Pro Gly Thr Gln Arg Gly Arg Gly Pro Arg Gly Phe	

386	391	396	401	
ccc ccc gag ggt gcc cag gac tcg gaa ggg gcg ccc cgg act cga caa Pro Pro Glu Gly Ala Gln Asp Ser Glu Gly Ala Pro Arg Thr Arg Gln 402 407 412 417	1425			
gct gga ccc cct gct ccc ggg ggg ggc gag cgc atg acc ccc ccg ccc Ala Gly Pro Pro Ala Pro Gly Gly Gly Glu Arg Met Thr Pro Pro Pro 418 423 428 433	1473			
tcg cgc tgc ctc ttt ccc ccg cgc ggc cgc ccc gtg ttg cac aaa ccc Ser Arg Cys Leu Phe Pro Pro Arg Gly Arg Pro Val Leu His Lys Pro 434 439 444 449	1521			
gcg cgt ctc ggc tgc ccc ttt gta cac cgc gcc gcg gaa ggg ggc tcc Ala Arg Leu Gly Cys Pro Phe Val His Arg Ala Ala Glu Gly Gly Ser 450 455 460 465	1569			
gag ggg gcg cag cct caa acc ctg cct ttc ctt tac ttt tac ttt ttt Glu Gly Ala Gln Pro Gln Thr Leu Pro Phe Leu Tyr Phe Tyr Phe Phe 466 471 476 481	1617			
ttt ttt ttt ctt tgg aag aga gaa gaa cag agt gtt cga ttc tgc cct Phe Phe Phe Leu Trp Lys Arg Glu Glu Gln Ser Val Arg Phe Cys Pro 482 487 492 497	1665			
att tat gtt tct act cgg gaa caa acg ttg gtt gtg tgt gtg tgt gtt Ile Tyr Val Ser Thr Arg Glu Gln Thr Leu Val Val Cys Val Cys Val 498 503 508 513	1713			
ttc ttg tgt tgg ttt ttt aaa gaa atg gga aga aga aaa aaa aat tct Phe Leu Cys Trp Phe Phe Lys Glu Met Gly Arg Arg Lys Lys Asn Ser 514 519 524 529	1761			
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ccc ccc tcc ctt ttt tgt tct gtt ttg ttt tgt ttt gct acg agt cca Pro Pro Ser Leu Phe Cys Ser Val Leu Phe Cys Phe Ala Thr Ser Pro 546 551 556 561	1857			
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Thr Ser Ser Ser Ser Thr Gln Ser Gly Gly Ser Gly Ala Ala His Arg	
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Leu Ala Asp Val Met Ala Gln Thr His Ile Glu Asn His Ser Ala Pro	
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Pro Asp Val Thr Thr Tyr Thr Ser Glu His Ser Ile Gln Val Glu Arg	
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Pro Gln Gly Ser Thr Gly Ser Arg Thr Ala Pro Lys Tyr Gly Asn Ala	
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Ala Lys Ile Gln Gln Leu Val Asn Thr Leu Lys Arg Pro Lys Arg Pro	
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Pro Leu Arg Glu Phe Phe Val Asp Asp Phe Glu Glu Leu Leu Glu Val	
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Gln Gln Pro Asp Pro Asn Gln Pro Lys Pro Glu Gly Ala Gln Met Leu	
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Ala Met Arg Gly Glu Gln Leu Gly Val Val Thr Asn Trp Pro Pro Ser	
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Cys Leu Thr Thr Met Asp Thr Asn Gly Lys Pro Leu Tyr Ile Leu Thr	
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Tyr Gly Lys Leu Trp Thr Arg Ser Met Lys Val Ala Tyr Ser Ile Leu	
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Lys Ser Arg Asp Met His Trp Ala Leu Val Ala His Arg Asp Gln Arg	
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Asp Ile Asn Leu Ser Ser Leu Arg Met Leu Ile Val Ala Asp Gly Ala	
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Asn Pro Trp Ser Ile Ser Ser Cys Asp Ala Phe Leu Asn Val Phe Gln	
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Lys Asn Thr Phe Glu Val Phe Pro Met Thr Ser Ser Gly Ala Pro Ile	
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Gly Gly Leu Val Phe Val Val Gly Lys Met Asp Gly Leu Met Val Val	
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Ser Gly Arg Arg His Asn Ala Asp Asp Ile Val Ala Thr Ala Leu Ala	
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Pro Asp Ser Thr Glu	Glu Asp Ser Phe	Gln Trp Met Ser Arg	Val Leu	
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gtc cta atg tgc ccc	cac acc tgc gtc	aca aac ttg cct	aag cct cga	2361
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Leu Gln Trp Arg Ala	Gln Thr Thr Pro	Asp His Ile Leu	Tyr Thr Leu	
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cac aag aga gct gag	aag atc gcc gtg	atg ctg atg gag	agg ggc cac	2649
His Lys Arg Ala Glu	Lys Ile Ala Val	Met Leu Met Glu	Arg Gly His	
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Leu Gln Asp Gly Asp	His Val Ala Leu	Val Tyr Pro Pro	Gly Ile Asp	
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Met Ser His Ala Ala Thr Ser Ala Phe Cys Arg Ser Ile Lys Leu Gln	
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Cys Gly Leu Gly Phe Val Leu Trp Cys Leu Cys Ser Val Tyr Ser Gly	
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Pro	Ser	Gln	Gly	Gly	Ser	Ser	Leu	Gly	Met	Ala	Gln	Arg	His	Asn	Ser		
86					91					96					101		
gta	cgg	agc	tat	aca	ctc	tgt	gag	ttt	gcc	cag	gaa	cag	gag	gtg	aac		751
Val	Arg	Ser	Tyr	Thr	Leu	Cys	Glu	Phe	Ala	Gln	Glu	Gln	Glu	Val	Asn		
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His	Arg	Glu	Ile	Leu	Arg	Glu	His	Leu	Lys	Glu	Glu	Lys	Leu	His	Ala		
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Lys	Lys	Met	Lys	Leu	Thr	Lys	Asn	Gly	Thr	Val	Glu	Ser	Val	Glu	Ala		
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Asn	Val	Glu	Val	Asp	Asp	Tyr	Phe	Phe	Leu	Gln	Pro	Leu	Pro	Thr	Lys		
166					171					176					181		
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Arg	Arg	Arg	Ala	Leu	Leu	Arg	Ala	Ser	Gly	Val	His	Arg	Ile	Asp	Ala		
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Glu	Glu	Lys	Gln	Glu	Leu	Arg	Ala	Ile	Arg	Leu	Ser	Arg	Glu	Glu	Cys		
198					203					208					213		
ggg	tgt	gac	tgc	cga	ctg	tat	tgt	gac	cca	taa	gcgtgtgc	ctgcagccag					1090
Gly	Cys	Asp	Cys	Arg	Leu	Tyr	Cys	Asp	Pro	*							
214					219					224							
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His Leu Ala Gln Ala His Gly Glu Met Leu Ser Gly Ile Thr Tyr Ile	
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aag ttt gtc aaa gtc cct ggg gaa ctg gtt act gca aag atg gct gaa	144
Lys Phe Val Lys Val Pro Gly Glu Leu Val Thr Ala Lys Met Ala Glu	
33 38 43 48	
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Ile Arg Glu Gln Cys Val Ala Gly Pro Arg Gly Gly Ser Thr Gln Trp	
49 54 59 64	
ctg aac acc ggg aag gaa ctg gca ctt gga gtc tgg aca ttt gaa act	240
Leu Asn Thr Gly Lys Glu Leu Ala Leu Gly Val Trp Thr Phe Glu Thr	
65 70 75 80	
tgg gag aga ggc tca cca ctt ttg agt cca cgg ggc ttg cac ctc cac	288
Trp Glu Arg Gly Ser Pro Leu Leu Ser Pro Arg Gly Leu His Leu His	
81 86 91 96	
aag aca aac atc cct agg cca ccc aga gta ggc aag aga gga ggt gaa	336
Lys Thr Asn Ile Pro Arg Pro Pro Arg Val Gly Lys Arg Gly Gly Glu	
97 102 107 112	
gcc tcg gga gaa acc cct ccc ttg gca gct ggt tta aga ccc aaa acg	384
Ala Ser Gly Glu Thr Pro Pro Leu Ala Ala Gly Leu Arg Pro Lys Thr	
113 118 123 128	
ggg ata caa atg ccc ctg aga gag cag tgg tat act gga ata gat gag	432
Gly Ile Gln Met Pro Leu Arg Glu Gln Trp Tyr Thr Gly Ile Asp Glu	
129 134 139 144	
gat ggg cac atg gtg gag agg cgt gtt ttt gtg tac cag ccc ttc ttc	480
Asp Gly His Met Val Glu Arg Arg Val Phe Val Tyr Gln Pro Phe Phe	
145 150 155 160	
tct gcc gac ctc ctc aac tgg aaa aac aat acc cca tcc tat act gaa	528
Ser Ala Asp Leu Leu Asn Trp Lys Asn Asn Thr Pro Ser Tyr Thr Glu	
161 166 171 176	
aag ccg caa gct cta att gat ttg ctc caa act att atc cag acc cat	576
Lys Pro Gln Ala Leu Ile Asp Leu Leu Gln Thr Ile Ile Gln Thr His	

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Asn Pro Thr Trp Ala Asp Cys His Gln Leu Leu Met Phe Leu Phe Asn				
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Thr Asp Glu Arg Arg Arg Val Leu Gln Ala Ala Thr Lys Trp Leu Glu				
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Glu His Ala Pro Ala Asp Tyr Gln Asn Pro Gln Glu Tyr Val Arg Thr				
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Gln Leu Pro Gly Thr Asp Pro Gln Trp Asp Pro Asn Glu Arg Glu Asp				
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Ser Pro Ala Gln Phe Tyr Glu Arg Leu Cys Glu Ala Tyr Cys Met Tyr				
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Gln Ala Gly Phe Ala Gly Met Asn Thr Ser Gln Leu Leu Glu Ile Ala				
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Arg Glu Asn Glu His Gln Val Arg Arg Asn Ala Asp Leu Leu Ala Ala				
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Met Thr Val Gly Gly Lys Asp Ile Asp Phe Leu Val Asp Thr Gly Ala	
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Glu His Ser Val Val Thr Thr Pro Val Ser Pro Leu Ser Lys Lys Thr	
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Lys Asn Leu Phe Leu Gln Leu Ala Glu Asn Val Ala His Ser Leu Lys				
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Tyr Gln Glu Asp Ala Ser Asp Met Lys Asp Met Ser Lys Tyr Lys Pro	
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His Ile Leu Leu Ser Gln Glu Asn Thr Gln Ile Arg Asp Leu Gln Gln	
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gcctagctcg gttccgcctc ctctcgcgc ggcccagcg gctgcccgca cccagcccc      300
actccgggcc tccgtgtctc tcctgtgatc gcaactgacac ggccgggggg ttagaatgga      360
acaaactgaa ggcccgatga gagaaaggga aagttaagga tgctggagca gaaca atg      418
                                         Met
                                         1

gat ttc tct ttc tct ttc atg caa ggg atc atg gga aac aca att cag      466
Asp Phe Ser Phe Ser Phe Met Gln Gly Ile Met Gly Asn Thr Ile Gln
  2               7               12              17

caa cca cct caa ctg att gac tcc gcc aac atc cgt cag gag gat gcc      514
Gln Pro Pro Gln Leu Ile Asp Ser Ala Asn Ile Arg Gln Glu Asp Ala
 18               23               28              33

ttt gat aac aac agt gac att gct gaa gat ggt ggc cag aca cca tat      562
Phe Asp Asn Asn Ser Asp Ile Ala Glu Asp Gly Gly Gln Thr Pro Tyr
 34               39               44              49

gaa gct act ttg cag caa ggc ttt cag tac cca gct aca aca gaa gat      610
Glu Ala Thr Leu Gln Gln Gly Phe Gln Tyr Pro Ala Thr Thr Glu Asp
 50               55               60              65

ctt cct cca ctg aca aat ggg tat cca tca tca atc agt gtg tat gaa      658
Leu Pro Pro Leu Thr Asn Gly Tyr Pro Ser Ser Ile Ser Val Tyr Glu
 66               71               76              81

act caa acc aaa tac cag tca tat aat cag tat cct aat ggg tca gcc      706
Thr Gln Thr Lys Tyr Gln Ser Tyr Asn Gln Tyr Pro Asn Gly Ser Ala
 82               87               92              97

aat ggc ttt ggt gca gtt aga aac ttt agc ccc act gac tat tat cat      754
Asn Gly Phe Gly Ala Val Arg Asn Phe Ser Pro Thr Asp Tyr Tyr His
 98               103              108             113

tca gaa att cca aac aca aga cca cat gaa att ctg gaa aaa cct tcc      802
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Ser Glu Ile Pro Asn Thr Arg Pro His Glu Ile Leu Glu Lys Pro Ser	
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130 135 140 145	
aag aag act ggc tca cct gaa att aaa cta aaa ata acc aaa act atc	898
Lys Lys Thr Gly Ser Pro Glu Ile Lys Leu Lys Ile Thr Lys Thr Ile	
146 151 156 161	
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Gln Asn Gly Arg Glu Leu Phe Glu Ser Ser Leu Cys Gly Asp Leu Leu	
162 167 172 177	
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Asn Glu Val Gln Ala Ser Glu His Thr Lys Ser Lys His Glu Ser Arg	
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Lys Glu Lys Arg Lys Lys Ser Asn Lys His Asp Ser Ser Arg Ser Glu	
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gag cgc aag tca cac aaa atc ccc aaa tta gaa cca gag gaa caa aat	1090
Glu Arg Lys Ser His Lys Ile Pro Lys Leu Glu Pro Glu Glu Gln Asn	
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cca gta cta aaa gag gaa gcc cca gtt cag cca ata cta tct tct gtt	1186
Pro Val Leu Lys Glu Glu Ala Pro Val Gln Pro Ile Leu Ser Ser Val	
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cca aca acg gaa gtg tcc act ggt gtt aag ttt cag gtt ggc gat ctt	1234
Pro Thr Thr Glu Val Ser Thr Gly Val Lys Phe Gln Val Gly Asp Leu	
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Val Trp Ser Lys Val Gly Thr Tyr Pro Trp Trp Pro Cys Met Val Ser	
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Ser Asp Pro Gln Leu Glu Val His Thr Lys Ile Asn Thr Arg Gly Ala	
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Arg Glu Tyr His Val Gln Phe Phe Ser Asn Gln Pro Glu Arg Ala Trp	
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Val His Glu Lys Arg Val Arg Glu Tyr Lys Gly His Lys Gln Tyr Glu	
322 327 332 337	
gaa tta ctg gct gag gca acc aaa caa gcc agc aat cac tct gag aaa	1474
Glu Leu Leu Ala Glu Ala Thr Lys Gln Ala Ser Asn His Ser Glu Lys	

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Gln Lys Ile Arg Lys Pro Arg Pro Gln Arg Glu Arg Ala Gln Trp Asp				
354	359	364	369	
att ggc att gcc cat gca gag aaa gca ttg aaa atg act cga gaa gaa				1570
Ile Gly Ile Ala His Ala Glu Lys Ala Leu Lys Met Thr Arg Glu Glu				
370	375	380	385	
aga ata gaa cag tat act ttt att tac att gat aaa cag cct gaa gag				1618
Arg Ile Glu Gln Tyr Thr Phe Ile Tyr Ile Asp Lys Gln Pro Glu Glu				
386	391	396	401	
gct tta tcc caa gca aaa aag agt gtt gcc tcc aaa acc gaa gtt aaa				1666
Ala Leu Ser Gln Ala Lys Lys Ser Val Ala Ser Lys Thr Glu Val Lys				
402	407	412	417	
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Lys Thr Arg Arg Pro Arg Ser Val Leu Asn Thr Gln Pro Glu Gln Thr				
418	423	428	433	
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Asn Ala Gly Glu Val Ala Ser Ser Leu Ser Ser Thr Glu Ile Arg Arg				
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cat agc cag agg cgg cac aca agt gcg gaa gag gaa gag cca ccg cct				1810
His Ser Gln Arg Arg His Thr Ser Ala Glu Glu Glu Glu Pro Pro Pro				
450	455	460	465	
gtt aaa ata gcc tgg aaa act gcg gca gca agg aaa tcc tta cca gct				1858
Val Lys Ile Ala Trp Lys Thr Ala Ala Ala Arg Lys Ser Leu Pro Ala				
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Ser Ile Thr Met His Lys Gly Ser Leu Asp Leu Gln Lys Cys Asn Met				
482	487	492	497	
tct cca gtt gtg aaa att gaa caa gtg ttt gct ctt cag aat gct aca				1954
Ser Pro Val Val Lys Ile Glu Gln Val Phe Ala Leu Gln Asn Ala Thr				
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Gly Asp Gly Lys Phe Ile Asp Gln Phe Val Tyr Ser Thr Lys Gly Ile				
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Gly Asn Lys Thr Glu Ile Ser Val Arg Gly Gln Asp Arg Leu Ile Ile				
530	535	540	545	
tct aca cca aac cag aga aat gaa aag cca acg cag agt gta tca tct				2098
Ser Thr Pro Asn Gln Arg Asn Glu Lys Pro Thr Gln Ser Val Ser Ser				
546	551	556	561	
cct gaa gca aca tct ggt tct aca ggc tca gta gaa aag aag caa cag				2146
Pro Glu Ala Thr Ser Gly Ser Thr Gly Ser Val Glu Lys Lys Gln Gln				
562	567	572	577	

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Val Pro Lys Lys Lys Ile Lys Lys Glu Gln Val Glu Thr Val Pro Gln	
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Ala Thr Val Lys Thr Gly Leu Gln Lys Gly Ser Ala Asp Arg Gly Val	
610 615 620 625	
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Gln Gly Ser Val Arg Phe Ser Asp Ser Ser Val Ser Ala Ala Ile Glu	
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Glu Thr Val Asp *	
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gagcctga atg atg act gct gaa tca cgg gaa gcc acg ggt ctg tcc cca	290
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Gln Ala Ala Gln Glu Lys Asp Gly Ile Val Ile Val Lys Val Glu Glu	
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Glu Asp Glu Glu Asp His Met Trp Gly Gln Asp Ser Thr Leu Gln Asp	
31 36 41 46	
acg cct cct cca gac cca gag ata ttc cgc caa cgc ttc agg cgc ttc	434
Thr Pro Pro Pro Asp Pro Glu Ile Phe Arg Gln Arg Phe Arg Arg Phe	
47 52 57 62	
tgt tac cag aac act ttt ggg ccc cga gag gct ctc agt cgg ctg aag	482
Cys Tyr Gln Asn Thr Phe Gly Pro Arg Glu Ala Leu Ser Arg Leu Lys	
63 68 73 78	
gaa ctt tgt cat cag tgg ctg cgg cca gaa ata aac acc aag gaa cag	530
Glu Leu Cys His Gln Trp Leu Arg Pro Glu Ile Asn Thr Lys Glu Gln	
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Ile Leu Glu Leu Leu Val Leu Glu Gln Phe Leu Ser Ile Leu Pro Lys	
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gag ctc cag gtc tgg ctg cag gaa tac cgc ccc gat agt gga gag gag	626
Glu Leu Gln Val Trp Leu Gln Glu Tyr Arg Pro Asp Ser Gly Glu Glu	
111 116 121 126	
gcc gtg acc ctt cta gaa gac ttg gag ctt gat tta tca gga caa cag	674
Ala Val Thr Leu Leu Glu Asp Leu Glu Leu Asp Leu Ser Gly Gln Gln	
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Val Pro Gly Gln Val His Gly Pro Glu Met Leu Ala Arg Gly Met Val	
143 148 153 158	
cct ctg gat cca gtt cag gag tcc tcg agc ttt gac ctt cat cac gag	770
Pro Leu Asp Pro Val Gln Glu Ser Ser Ser Phe Asp Leu His His Glu	
159 164 169 174	
gcc acc cag tcc cac ttc aaa cat tcg tct cgg aaa ccc cgc ctc tta	818
Ala Thr Gln Ser His Phe Lys His Ser Ser Arg Lys Pro Arg Leu Leu	
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Gln Ser Arg Ala Leu Pro Ala Ala His Ile Pro Ala Pro Pro His Glu	
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Gly Ser Pro Arg Asp Gln Ala Met Ala Ser Ala Leu Phe Thr Ala Asp	
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Ser Gln Ala Met Val Lys Ile Glu Asp Met Ala Val Ser Leu Ile Leu	
223 228 233 238	

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aac agg cag gag aat tat ggg agc gca ttt ccc cag ggt ggt gaa aac Asn Arg Gln Glu Asn Tyr Gly Ser Ala Phe Pro Gln Gly Gly Glu Asn 255 260 265 270	1058
agg aat gag aac gag gag tca acc tca aag gct gaa acc tcg gaa gat Arg Asn Glu Asn Glu Glu Ser Thr Ser Lys Ala Glu Thr Ser Glu Asp 271 276 281 286	1106
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gag aaa cgt gac cag gag ggc aaa aca gga gaa aga cag cag aaa aac Glu Lys Arg Asp Gln Glu Gly Lys Thr Gly Glu Arg Gln Gln Lys Asn 303 308 313 318	1202
cct gag gag aaa acc agg aaa gag aaa aga gat tca ggg cca gct ata Pro Glu Glu Lys Thr Arg Lys Glu Lys Arg Asp Ser Gly Pro Ala Ile 319 324 329 334	1250
gga aag gac aaa aaa acc atc aca gga gag aga ggt cca agg gag aag Gly Lys Asp Lys Lys Thr Ile Thr Gly Glu Arg Gly Pro Arg Glu Lys 335 340 345 350	1298
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aat ctc atc ctc cat cag cgc atc cac tct gga gag aaa cct tat gaa Asn Leu Ile Leu His Gln Arg Ile His Ser Gly Glu Lys Pro Tyr Glu 447 452 457 462	1634
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Cys Asn Glu Cys Gly	Lys Ala Phe Ser Gln Ser Ser Asp Leu Thr Lys	
463	468	473 478
cat cag aga att cac	acg ggg gag aaa ccc tat gaa tgt agt gaa tgt	1730
His Gln Arg Ile His	Thr Gly Glu Lys Pro Tyr Glu Cys Ser Glu Cys	
479	484 489	494
gga aaa gct ttc aac	cga aac tca tac ctg att ttg cat cgg aga att	1778
Gly Lys Ala Phe Asn	Arg Asn Ser Tyr Leu Ile Leu His Arg Arg Ile	
495	500 505	510
cac act cga gaa aag	ccc tac aag tgc act aag tgt ggc aag gcc ttc	1826
His Thr Arg Glu Lys	Pro Tyr Lys Cys Thr Lys Cys Gly Lys Ala Phe	
511	516 521	526
acc cgc agc tcc acc	ctc act ctg cat cac aga atc cat gcc aga gag	1874
Thr Arg Ser Ser Thr	Leu Thr Leu His His Arg Ile His Ala Arg Glu	
527	532 537	542
aga gcc tct gag tac	agc cca gcc tcc ctt gat gca ttt ggc gcg ttc	1922
Arg Ala Ser Glu Tyr	Ser Pro Ala Ser Leu Asp Ala Phe Gly Ala Phe	
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ctg aaa agt tgt gtg	taa aggaag aatttgccat caagccattt cccctttttg	1976
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 20 25 30 35
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 Pro Met Ser Pro Leu Thr Leu His Thr Ile Pro Gln Ser Ile Leu Leu
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 Gln Ser Thr Arg Pro Pro Val Leu Pro Gln Pro Arg Ala Val Arg Pro
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 Arg Glu Ala Leu Cys His Lys Ser *
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Thr Cys Ile Gly Thr Pro Tyr Tyr Leu Ser Pro Glu Ile Cys Glu Asn 162	167	172	177	
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tat gag ctg tgt aca ctt aaa cat gct ttt gaa gct ggc agt atg aaa Tyr Glu Leu Cys Thr Leu Lys His Ala Phe Glu Ala Gly Ser Met Lys 194	199	204	209	1160
aac ctg gta ctg aag ata ata tct gga tct ttt cca cct gtg tct ttg Asn Leu Val Leu Lys Ile Ile Ser Gly Ser Phe Pro Pro Val Ser Leu 210	215	220	225	1208
cat tat tcc tat gat ctc cgc agt ttg gtg tct cag tta ttt aaa aga His Tyr Ser Tyr Asp Leu Arg Ser Leu Val Ser Gln Leu Phe Lys Arg 226	231	236	241	1256
aat cct agg gat aga cca tca gtc aac tcc ata ttg gag aaa ggt ttt Asn Pro Arg Asp Arg Pro Ser Val Asn Ser Ile Leu Glu Lys Gly Phe 242	247	252	257	1304
ata gcc aaa cgc att gaa aag ttt ctc tct cct cag ctt att gca gaa Ile Ala Lys Arg Ile Glu Lys Phe Leu Ser Pro Gln Leu Ile Ala Glu 258	263	268	273	1352
gaa ttt tgt cta aaa aca ttt tgc aag ttt gga tca cag cct ata cca Glu Phe Cys Leu Lys Thr Phe Ser Lys Phe Gly Ser Gln Pro Ile Pro 274	279	284	289	1400
gct aaa aga cca gct tca gga caa aac tgc att tct gtt atg cct gct Ala Lys Arg Pro Ala Ser Gly Gln Asn Ser Ile Ser Val Met Pro Ala 290	295	300	305	1448
cag aaa att aca aag cct gcc gct aaa tat gga ata cct tta gca tat Gln Lys Ile Thr Lys Pro Ala Ala Lys Tyr Gly Ile Pro Leu Ala Tyr 306	311	316	321	1496
aag aaa tat gga gat aaa aaa tta cac gaa aag aaa cca ctg caa aaa Lys Lys Tyr Gly Asp Lys Lys Leu His Glu Lys Lys Pro Leu Gln Lys 322	327	332	337	1544
cat aaa cag gcc cat caa act cca gag aag aga gtg aat act ggg gaa His Lys Gln Ala His Gln Thr Pro Glu Lys Arg Val Asn Thr Gly Glu 338	343	348	353	1592
gaa agg agg aaa ata tct gag gaa gca gca aga aag aga agg ctg gaa Glu Arg Arg Lys Ile Ser Glu Glu Ala Ala Arg Lys Arg Arg Leu Glu 354	359	364	369	1640
ttt att gaa aaa gaa aag aaa caa aag gat cag att att agt tta atg Phe Ile Glu Lys Glu Lys Lys Gln Lys Asp Gln Ile Ile Ser Leu Met 370	375	380	385	1688
aag gct gaa caa atg aaa agg caa gaa aag gaa agg ttg gaa aga ata Lys Ala Glu Gln Met Lys Arg Gln Glu Lys Glu Arg Leu Glu Arg Ile				1736

386	391	396	401	
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Asn Arg Ala Arg Glu	Gln Gly Trp Arg Asn	Val Leu Ser Ala Gly Gly		
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Ser Gly Glu Val Lys	Ala Pro Phe Leu Gly	Ser Gly Gly Thr Ile Ala		
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Pro Ser Ser Phe Ser	Ser Arg Gly Gln Tyr	Glu His Tyr His Ala Ile		
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Phe Asp Gln Met Gln	Gln Gln Arg Ala Glu	Asp Asn Glu Ala Lys Trp		
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Lys Arg Glu Ile Tyr	Gly Arg Gly Leu Pro	Glu Arg Gln Lys Gly Gln		
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Leu Ala Val Glu Arg	Ala Lys Gln Val Glu	Glu Phe Leu Gln Arg Lys		
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cgg gaa gct atg cag	aat aaa gct cga gcc	gaa gga cat atg gga atc		2072
Arg Glu Ala Met Gln	Asn Lys Ala Arg Ala	Glu Gly His Met Gly Ile		
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Leu Gln Asn Leu Ala	Ala Met Tyr Gly Gly	Arg Pro Ser Ser Ser Arg		
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Gly Gly Lys Pro Arg	Asn Lys Glu Glu Glu	Val Tyr Leu Ala Arg Leu		
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Arg Gln Ile Arg Leu	Gln Asn Phe Asn Glu	Arg Gln Gln Ile Lys Ala		
546	551	556	561	
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Lys Leu Arg Gly Glu	Lys Lys Glu Ala Asn	His Ser Glu Gly Gln Glu		
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Ile Ser Val Thr Ser Ala Leu Lys Glu Val Gly Val Asp Ser Ser Leu	
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Arg Glu Ala Met Gln	Asn Lys Ala Arg Ala	Glu Gly His Met Val Tyr		
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Lys Asn Ser Asp Val Glu Pro Thr Ala Asn Gly Thr Asp Val Ala Asp	
1090 1095 1100 1105	
gaa gat gac aat ccc agc agt gaa agt gcc ctg aac gaa gaa tgg cac	3896
Glu Asp Asp Asn Pro Ser Ser Glu Ser Ala Leu Asn Glu Glu Trp His	
1106 1111 / 1116 1121	
tca gat aac agt gat ggt gaa att gct agt gaa tgt gaa tgc gat agt	3944

[illegible]

taataaaagc aaagtttttg aacctctgag tccaaagcag gctggttggc ataatatgta 5265
 atttgaaaaa taaaatctta tcttgcagca ctatcagtat gttgaattta ttatgtatat 5325
 tattttcta atccgaaact aaatacttga ttttttaata tgtgtgttta ttttatgata 5385
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 Met Thr Thr Gln Leu Pro Ala Tyr Val Ala Ile Leu Leu Phe Tyr Val
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 Ser Arg Ala Ser Cys Gln Asp Thr Phe Thr Ala Ala Val Tyr Glu His
 17 22 27 32

gca gcg ata ttg ccc aat gcc acc cta aca cca gtg tct cgt gag gag 144
 Ala Ala Ile Leu Pro Asn Ala Thr Leu Thr Pro Val Ser Arg Glu Glu
 33 38 43 48

gct ttg gca tta atg aat cgg aat ctg gac att ttg gaa gga gcg atc 192
 Ala Leu Ala Leu Met Asn Arg Asn Leu Asp Ile Leu Glu Gly Ala Ile
 49 54 59 64

aca tca gca gca gat cag ggt gcg cat att att gtg act cca gaa gat 240
 Thr Ser Ala Ala Asp Gln Gly Ala His Ile Ile Val Thr Pro Glu Asp
 65 70 75 80

gct att tat ggc tgg aac ttc aac agg gac tct ctc tac cca tat ttg 288
 Ala Ile Tyr Gly Trp Asn Phe Asn Arg Asp Ser Leu Tyr Pro Tyr Leu
 81 86 91 96

gag gac atc cca gac cct gaa gta aac tgg atc ccc tgt aat aat cgt 336
 Glu Asp Ile Pro Asp Pro Glu Val Asn Trp Ile Pro Cys Asn Asn Arg
 97 102 107 112

aac agg gac atg gat aaa gct gga aac cat cat tct cag caa act aac 384
 Asn Arg Asp Met Asp Lys Ala Gly Asn His His Ser Gln Gln Thr Asn
 113 118 123 128

aca gga aca gaa aac aaa aca ctg cat gtt ctc gct cat aag tgg gag 432
 Thr Gly Thr Glu Asn Lys Thr Leu His Val Leu Ala His Lys Trp Glu

129	134	139	144	
ttg aac aac gag aat	aca tgg aca caa gga	ggg gaa cat cac aca ccg	480	
Leu Asn Asn Glu Asn	Thr Trp Thr Gln Gly	Gly Glu His His Thr Pro		
145	150	155	160	
ggg cct gtc ggg gag	tcg ggg gct aag gga	ggg atg gca tta gga gaa	528	
Gly Pro Val Gly Glu	Ser Gly Ala Lys Gly	Gly Met Ala Leu Gly Glu		
161	166	171	176	
ata cct aat gta gat	gat ggg ttg atc tta	gag aaa agc ttt cag ttt	576	
Ile Pro Asn Val Asp	Asp Gly Leu Ile Leu	Glu Lys Ser Phe Gln Phe		
177	182	187	192	
tcc ctc att cag tat	gat acc agc cat ggg	tct gtc ata aat ggc tat	624	
Ser Leu Ile Gln Tyr	Asp Thr Ser His Gly	Ser Val Ile Asn Gly Tyr		
193	198	203	208	
tat tgt gtt gag acc	cca gta caa gaa aga	ctc agc tgc ctg gcc aag	672	
Tyr Cys Val Glu Thr	Pro Val Gln Glu Arg	Leu Ser Cys Leu Ala Lys		
209	214	219	224	
aac aac tct atc tat	gtt gtg gca aat att	ggg gac aag aag cca tgc	720	
Asn Asn Ser Ile Tyr	Val Val Ala Asn Ile	Gly Asp Lys Lys Pro Cys		
225	230	235	240	
gat acc agt gat cct	cag tgt ccc cct gat	ggc cgt tac caa tac aac	768	
Asp Thr Ser Asp Pro	Gln Cys Pro Pro Asp	Gly Arg Tyr Gln Tyr Asn		
241	246	251	256	
act gat gtg gta ttt	gat tct caa gga aaa	ctg gtg gca cgc tac cat	816	
Thr Asp Val Val Phe	Asp Ser Gln Gly Lys	Leu Val Ala Arg Tyr His		
257	262	267	272	
aag caa aac ctt ttc	atg ggt gaa aat caa	ttc aat gta ccc aag gag	864	
Lys Gln Asn Leu Phe	Met Gly Glu Asn Gln	Phe Asn Val Pro Lys Glu		
273	278	283	288	
cct gag att gtg act	ttc aat acc acc ttt	gga agt ttt ggc att ttc	912	
Pro Glu Ile Val Thr	Phe Asn Thr Thr Phe	Gly Ser Phe Gly Ile Phe		
289	294	299	304	
aca tgc ttt gat ata	ctc ttc cat gat cct	gct gtt acc ttg gtg aaa	960	
Thr Cys Phe Asp Ile	Leu Phe His Asp Pro	Ala Val Thr Leu Val Lys		
305	310	315	320	
gat ttc cac gtg gac	acc ata gta ttc cca	aca gct tgg atg aat gtt	1008	
Asp Phe His Val Asp	Thr Ile Val Phe Pro	Thr Ala Trp Met Asn Val		
321	326	331	336	
ttg cca cat ttg tca	gct gtt gaa ttc cac	tca gct tgg gct atg ggc	1056	
Leu Pro His Leu Ser	Ala Val Glu Phe His	Ser Ala Trp Ala Met Gly		
337	342	347	352	
atg agg gtc aat ttc	ctt gca tcc aac ata	cat tac ccc tca aag aaa	1104	
Met Arg Val Asn Phe	Leu Ala Ser Asn Ile	His Tyr Pro Ser Lys Lys		
353	358	363	368	

atg aca gga agt ggc atc tat gca ccc aat tct tca aga gca ttt cat	1152
Met Thr Gly Ser Gly Ile Tyr Ala Pro Asn Ser Ser Arg Ala Phe His	
369 374 379 384	
tat gat atg aag aca gaa gag gga aaa ctc ctc ctc tcg caa ctg gat	1200
Tyr Asp Met Lys Thr Glu Glu Gly Lys Leu Leu Leu Ser Gln Leu Asp	
385 390 395 400	
tcc cac cca tcc cat tct gca gtg gtg aac tgg act tcc tat gcc agc	1248
Ser His Pro Ser His Ser Ala Val Val Asn Trp Thr Ser Tyr Ala Ser	
401 406 411 416	
agt ata gaa gcg ctc tca tca gga aac aag gaa ttt aaa ggc act gtc	1296
Ser Ile Glu Ala Leu Ser Ser Gly Asn Lys Glu Phe Lys Gly Thr Val	
417 422 427 432	
ttt ttc gat gaa ttc act ttt gtg aag ctc aca gga gtt gca gga aat	1344
Phe Phe Asp Glu Phe Thr Phe Val Lys Leu Thr Gly Val Ala Gly Asn	
433 438 443 448	
tat aca gtt tgt cag aaa gat ctc tgc tgt cat tta agc tac aaa atg	1392
Tyr Thr Val Cys Gln Lys Asp Leu Cys Cys His Leu Ser Tyr Lys Met	
449 454 459 464	
tct gag aac ata cca aat gaa gtg tac gct cta ggg gca ttt gac gga	1440
Ser Glu Asn Ile Pro Asn Glu Val Tyr Ala Leu Gly Ala Phe Asp Gly	
465 470 475 480	
ctg cac act gtg gaa ggg cgc tat tat cta cag att tgt acc ctg ttg	1488
Leu His Thr Val Glu Gly Arg Tyr Tyr Leu Gln Ile Cys Thr Leu Leu	
481 486 491 496	
aaa tgt aaa acg act aat tta aac act tgc ggt gac tca gct gaa aca	1536
Lys Cys Lys Thr Thr Asn Leu Asn Thr Cys Gly Asp Ser Ala Glu Thr	
497 502 507 512	
gct tct acc agg ttt gaa atg ttc tcc ctc agt ggc act ttc gga acc	1584
Ala Ser Thr Arg Phe Glu Met Phe Ser Leu Ser Gly Thr Phe Gly Thr	
513 518 523 528	
cag tat gtc ttt cct gag gtg ttg ctg agt gaa aat cag ctt gca cct	1632
Gln Tyr Val Phe Pro Glu Val Leu Leu Ser Glu Asn Gln Leu Ala Pro	
529 534 539 544	
gga gaa ttt cag tgc tgt gat gat gga caa tta cat agt acc gat aac	1680
Gly Glu Phe Gln Cys Cys Asp Asp Gly Gln Leu His Ser Thr Asp Asn	
545 550 555 560	
agc cat gca ctg tgc aaa gca tgc cct tct gca cag gag agc aag gca	1728
Ser His Ala Leu Cys Lys Ala Cys Pro Ser Ala Gln Glu Ser Lys Ala	
561 566 571 576	
ctt gca gta gtg atc tat gcc agc aaa aca tca ttt tga	1767
Leu Ala Val Val Ile Tyr Ala Ser Lys Thr Ser Phe *	
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 Asp Arg Ala Val Ile Tyr Asn Pro Ala Thr Gln Ala Asp Trp Thr Ala
 17 22 27 32

aaa aag cta gtg tgg att cca tca gaa cgc cat ggt ttt gag gca gct 144
 Lys Lys Leu Val Trp Ile Pro Ser Glu Arg His Gly Phe Glu Ala Ala
 33 38 43 48

agt atc aaa gaa gaa cgg gga gat gaa gtt atg gtg gag ttg gca gag 192
 Ser Ile Lys Glu Glu Arg Gly Asp Glu Val Met Val Glu Leu Ala Glu
 49 54 59 64

aat gga aag aaa gca atg gtc aac aaa gat gat att cag aag atg aac 240
 Asn Gly Lys Lys Ala Met Val Asn Lys Asp Asp Ile Gln Lys Met Asn
 65 70 75 80

cca cct aag ttt tcc aag gtg gag gat atg gca gaa ttg aca tgc ttg 288
 Pro Pro Lys Phe Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu
 81 86 91 96

aat gaa gct tcc gtt tta cat aat ctg aag gat cgc tac tat tca gga 336
 Asn Glu Ala Ser Val Leu His Asn Leu Lys Asp Arg Tyr Tyr Ser Gly
 97 102 107 112

cta atc tat act tat tct gga ctc ttc tgt gta gtt ata aac cct tac 384
 Leu Ile Tyr Thr Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr
 113 118 123 128

aag aat ctt cca att tac tct gag aat att att gaa atg tac aga ggg 432
 Lys Asn Leu Pro Ile Tyr Ser Glu Asn Ile Ile Glu Met Tyr Arg Gly
 129 134 139 144

aag aag cgt cat gag atg cct cca cac atc tat gct ata tct gaa tct 480
 Lys Lys Arg His Glu Met Pro Pro His Ile Tyr Ala Ile Ser Glu Ser
 145 150 155 160

gct tac aga tgc atg ctt caa gat cgt gag gac cag tca att ctt tgc 528
 Ala Tyr Arg Cys Met Leu Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys
 161 166 171 176

acg ggt gag tca ggt gct ggg aag aca gaa aat aca aag aaa gtt att Thr Gly Glu Ser Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile 177 182 187 192	576
cag tac ctt gcc cat gtt gct tct tca cat aaa gga aga aag gac cat Gln Tyr Leu Ala His Val Ala Ser Ser His Lys Gly Arg Lys Asp His 193 198 203 208	624
aat att cct ggg gaa ctt gaa cgg cag ctt ttg caa gca aat cca att Asn Ile Pro Gly Glu Leu Glu Arg Gln Leu Leu Gln Ala Asn Pro Ile 209 214 219 224	672
ctg gaa tca ttt gga aat gcg aag act gtg aaa aat gat aac tca tct Leu Glu Ser Phe Gly Asn Ala Lys Thr Val Lys Asn Asp Asn Ser Ser 225 230 235 240	720
cgt ttt ggc aaa ttt att cgg atc aac ttt gat gta act ggc tat atc Arg Phe Gly Lys Phe Ile Arg Ile Asn Phe Asp Val Thr Gly Tyr Ile 241 246 251 256	768
gtt ggg gcc aac att gaa aca tac ctt ctg gaa aag tct cgt gct gtt Val Gly Ala Asn Ile Glu Thr Tyr Leu Leu Glu Lys Ser Arg Ala Val 257 262 267 272	816
cgt caa gca aaa gat gaa cgt act ttt cat atc ttt tac cag ttg tta Arg Gln Ala Lys Asp Glu Arg Thr Phe His Ile Phe Tyr Gln Leu Leu 273 278 283 288	864
tct gga gca gga gaa cac cta aag tct gat ttg ctt ctt gaa gga ttt Ser Gly Ala Gly Glu His Leu Lys Ser Asp Leu Leu Leu Glu Gly Phe 289 294 299 304	912
aat aac tac agg ttt ctc tcc aat ggc tat att cct att ccg gga cag Asn Asn Tyr Arg Phe Leu Ser Asn Gly Tyr Ile Pro Ile Pro Gly Gln 305 310 315 320	960
caa gac aaa gat aat ttc cag gag acc atg gaa gca atg cac ata atg Gln Asp Lys Asp Asn Phe Gln Glu Thr Met Glu Ala Met His Ile Met 321 326 331 336	1008
ggc ttc tcc cat gaa gag att ctg tca atg ctt aaa gta gta tct tca Gly Phe Ser His Glu Glu Ile Leu Ser Met Leu Lys Val Val Ser Ser 337 342 347 352	1056
gtg cta cag ttt gga aat att tct ttc aaa aag gag aga aat act gat Val Leu Gln Phe Gly Asn Ile Ser Phe Lys Lys Glu Arg Asn Thr Asp 353 358 363 368	1104
caa gct tcc atg cca gaa aat aca gtt gcg cag aag ctc tgc cat ctt Gln Ala Ser Met Pro Glu Asn Thr Val Ala Gln Lys Leu Cys His Leu 369 374 379 384	1152
ctt ggg atg aat gtg atg gag ttt act cgg gcc atc ctg act ccc cgg Leu Gly Met Asn Val Met Glu Phe Thr Arg Ala Ile Leu Thr Pro Arg 385 390 395 400	1200

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gca gat ttt gca gta gaa gca ttg gca aaa gct acc tat gag cgg ctc Ala Asp Phe Ala Val Glu Ala Leu Ala Lys Ala Thr Tyr Glu Arg Leu 417 422 427 432	1296
ttt cgc tgg ctc gtt cat cgc atc aat aaa gct ctg gat agg acc aaa Phe Arg Trp Leu Val His Arg Ile Asn Lys Ala Leu Asp Arg Thr Lys 433 438 443 448	1344
cgt cag gga gca tct ttc att gga atc ctg gat att gct gga ttt gaa Arg Gln Gly Ala Ser Phe Ile Gly Ile Leu Asp Ile Ala Gly Phe Glu 449 454 459 464	1392
att ttt gag ctg aac tcc ttt gaa caa ctt tgc atc aac tac acc aat Ile Phe Glu Leu Asn Ser Phe Glu Gln Leu Cys Ile Asn Tyr Thr Asn 465 470 475 480	1440
gag aag ctg cag cag ctg ttc aac cac acc atg ttt atc cta gaa caa Glu Lys Leu Gln Gln Leu Phe Asn His Thr Met Phe Ile Leu Glu Gln 481 486 491 496	1488
gag gaa tac cag cgc gaa ggc atc gag tgg aac ttc atc gat ttc ggg Glu Glu Tyr Gln Arg Glu Gly Ile Glu Trp Asn Phe Ile Asp Phe Gly 497 502 507 512	1536
ctg gat ctg cag cca tgc atc gac cta ata gag aga cct gcg aac cct Leu Asp Leu Gln Pro Cys Ile Asp Leu Ile Glu Arg Pro Ala Asn Pro 513 518 523 528	1584
cct ggt gta ctg gcc ctt ttg gat gaa gaa tgc tgg ttc cct aaa gcc Pro Gly Val Leu Ala Leu Leu Asp Glu Glu Cys Trp Phe Pro Lys Ala 529 534 539 544	1632
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tcc aag ttt cag aaa cct cga caa tta aaa gac aaa gct gat ttt tgc Ser Lys Phe Gln Lys Pro Arg Gln Leu Lys Asp Lys Ala Asp Phe Cys 561 566 571 576	1728
att ata cat tat gca ggg aag gtg gac tat aag gca gat gag tgg ctg Ile Ile His Tyr Ala Gly Lys Val Asp Tyr Lys Ala Asp Glu Trp Leu 577 582 587 592	1776
atg aag aat atg gac ccc ctg aat gac aac gtg gcc acc ctt ttg cac Met Lys Asn Met Asp Pro Leu Asn Asp Asn Val Ala Thr Leu Leu His 593 598 603 608	1824
cag tca tca gac aga ttt gtg gca gag ctt tgg aaa gat gtg gac cgt Gln Ser Ser Asp Arg Phe Val Ala Glu Leu Trp Lys Asp Val Asp Arg 609 614 619 624	1872
atc gtg ggt ctg gat caa gtc act ggt atg act gag aca gct ttt ggc	1920

849	854	859	864
aag gag aag cag aca aag gtg gaa gga gag ctg gag gag atg gag cgg			2640
Lys Glu Lys Lys Thr Lys Val Glu Gly Glu Leu Glu Glu Met Glu Arg			
865	870	875	880
aag cac cag cag ctt tta gaa gag aag aat atc ctt gca gaa caa cta			2688
Lys His Gln Gln Leu Leu Glu Glu Lys Asn Ile Leu Ala Glu Gln Leu			
881	886	891	896
caa gca gag act gag ctc ttt gct gaa gca gaa gag atg agg gca aga			2736
Gln Ala Glu Thr Glu Leu Phe Ala Glu Ala Glu Glu Met Arg Ala Arg			
897	902	907	912
ctt gct gct aaa aag cag gaa tta gaa gag att cta cat gac ttg gag			2784
Leu Ala Ala Lys Lys Gln Glu Leu Glu Glu Ile Leu His Asp Leu Glu			
913	918	923	928
tct agg gtt gaa gaa gaa gaa gaa aga aac caa atc ctc caa aat gaa			2832
Ser Arg Val Glu Glu Glu Glu Glu Arg Asn Gln Ile Leu Gln Asn Glu			
929	934	939	944
aag aaa aaa atg caa gca cat att cag gac ctg gaa gaa cag cta gac			2880
Lys Lys Lys Met Gln Ala His Ile Gln Asp Leu Glu Glu Gln Leu Asp			
945	950	955	960
gag gag gaa ggg gct cgg caa aag ctg cag ctg gaa aag gtg aca gca			2928
Glu Glu Glu Gly Ala Arg Gln Lys Leu Gln Leu Glu Lys Val Thr Ala			
961	966	971	976
gag gcc aag atc aag aag atg gaa gag gag att ctg ctt ctc gag gac			2976
Glu Ala Lys Ile Lys Lys Met Glu Glu Glu Ile Leu Leu Leu Glu Asp			
977	982	987	992
caa aat tcc aag ttc atc aaa gaa aag aaa ctc atg gaa gat cgc att			3024
Gln Asn Ser Lys Phe Ile Lys Glu Lys Lys Leu Met Glu Asp Arg Ile			
993	998	1003	1008
gct gag tgt tcc tct cag ctg gct gaa gag gaa gaa aag gcg aaa aac			3072
Ala Glu Cys Ser Ser Gln Leu Ala Glu Glu Glu Glu Lys Ala Lys Asn			
1009	1014	1019	1024
ttg gcc aaa atc agg aat aag caa gaa gtg atg atc tca gat tta gaa			3120
Leu Ala Lys Ile Arg Asn Lys Gln Glu Val Met Ile Ser Asp Leu Glu			
1025	1030	1035	1040
gaa cgc tta aag aag gaa gaa aag act cgt cag gaa ctg gaa aag gcc			3168
Glu Arg Leu Lys Lys Glu Glu Lys Thr Arg Gln Glu Leu Glu Lys Ala			
1041	1046	1051	1056
aaa aga aaa ctc gac ggg gag acg acc gac ctg cag gac cag atc gca			3216
Lys Arg Lys Leu Asp Gly Glu Thr Thr Asp Leu Gln Asp Gln Ile Ala			
1057	1062	1067	1072
gag ctg cag gcg cag att gat gag ctc aag ctg cag ctg gcc aag aag			3264
Glu Leu Gln Ala Gln Ile Asp Glu Leu Lys Leu Gln Leu Ala Lys Lys			
1073	1078	1083	1088

gag gag gag ctg cag ggc gca ctg gcc aga ggt gat gat gaa aca ctc Glu Glu Glu Leu Gln Gly Ala Leu Ala Arg Gly Asp Asp Glu Thr Leu	3312
1089 1094 1099 1104	
cat aag aac aat gcc ctt aaa gtt gtg cga gag cta caa gcc caa att His Lys Asn Asn Ala Leu Lys Val Val Arg Glu Leu Gln Ala Gln Ile	3360
1105 1110 1115 1120	
gct gaa ctt cag gaa gac ttt gaa tcc gag aag gct tca cgg aac aag Ala Glu Leu Gln Glu Asp Phe Glu Ser Glu Lys Ala Ser Arg Asn Lys	3408
1121 1126 1131 1136	
gcc gaa aag cag aaa agg gac ttg agt gag gaa ctg gaa gct ctg aaa Ala Glu Lys Gln Lys Arg Asp Leu Ser Glu Glu Leu Glu Ala Leu Lys	3456
1137 1142 1147 1152	
aca gag ctg gag gac acg ctg gac acc acg gca gcc cag cag gaa cta Thr Glu Leu Glu Asp Thr Leu Asp Thr Thr Ala Ala Gln Gln Glu Leu	3504
1153 1158 1163 1168	
cgt aca aaa cgt gaa caa gaa gtg gca gag ctg aag aaa gct ctt gag Arg Thr Lys Arg Glu Gln Glu Val Ala Glu Leu Lys Lys Ala Leu Glu	3552
1169 1174 1179 1184	
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1185 1190 1195 1200	
cac gca aca gcc ctg gag gag ctc tca gag cag ctg gaa cag gcc aag His Ala Thr Ala Leu Glu Glu Leu Ser Glu Gln Leu Glu Gln Ala Lys	3648
1201 1206 1211 1216	
cgg ttc aaa gca aat cta gag aag aac aag cag ggc ctg gag aca gat Arg Phe Lys Ala Asn Leu Glu Lys Asn Lys Gln Gly Leu Glu Thr Asp	3696
1217 1222 1227 1232	
aac aag gag ctg gcg tgt gag gtg aag gtc ctg cag cag gtc aag gct Asn Lys Glu Leu Ala Cys Glu Val Lys Val Leu Gln Gln Val Lys Ala	3744
1233 1238 1243 1248	
gag tct gag cac aag agg aag aag ctc gac gcg cag gtc cag gag ctc Glu Ser Glu His Lys Arg Lys Lys Leu Asp Ala Gln Val Gln Glu Leu	3792
1249 1254 1259 1264	
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1265 1270 1275 1280	
aaa gca agt aag ctg cag aat gag cta gat aat gtc tcc acc ctt ctg Lys Ala Ser Lys Leu Gln Asn Glu Leu Asp Asn Val Ser Thr Leu Leu	3888
1281 1286 1291 1296	
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1297 1302 1307 1312	

ctt gag tct caa cta cag gat aca cag gag ctt ctt cag gag gag aca	3984
Leu Glu Ser Gln Leu Gln Asp Thr Gln Glu Leu Leu Gln Glu Glu Thr	
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Arg Gln Lys Leu Asn Leu Ser Ser Arg Ile Arg Gln Leu Glu Glu Glu	
1329 1334 1339 1344	
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Lys Asn Ser Leu Gln Glu Gln Gln Glu Glu Glu Glu Glu Ala Arg Lys	
1345 1350 1355 1360	
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Asn Leu Glu Lys Gln Val Leu Ala Leu Gln Ser Gln Leu Ala Asp Thr	
1361 1366 1371 1376	
aag aag aaa gta gat gac gac ctg gga aca att gaa agt ctg gaa gaa	4176
Lys Lys Lys Val Asp Asp Asp Leu Gly Thr Ile Glu Ser Leu Glu Glu	
1377 1382 1387 1392	
gcc aag aag aag ctt ctg aag gac gcg gag gcc ctg agc cag cgc ctg	4224
Ala Lys Lys Lys Leu Leu Lys Asp Ala Glu Ala Leu Ser Gln Arg Leu	
1393 1398 1403 1408	
gag gag aag gca ctg gcg tat gac aaa ctg gag aag acc aag aac cgc	4272
Glu Glu Lys Ala Leu Ala Tyr Asp Lys Leu Glu Lys Thr Lys Asn Arg	
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Leu Gln Gln Glu Leu Asp Asp Leu Thr Val Asp Leu Asp His Gln Arg	
1425 1430 1435 1440	
cag gtc gcc tcc aac ttg gag aag aag caa gaa gaa gtt tga ccagctg	4369
Gln Val Ala Ser Asn Leu Glu Lys Lys Gln Glu Glu Val *	
1441 1446 1451	
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gaggccagag agaaagaaac caaagccctg tcaactggccc gggccctcga ggaagccctg	4489
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gccacggaag atgccaagct tcgtctggag gtcaacatgc aggccatgaa ggcgcagttc	4729
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253 258 263 268	
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Gly Asp Pro Ser Thr Thr Asn Leu Tyr Leu Gly Asn Ile Asn Pro Gln 269	274	279	284	
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 Leu Ser Asp Ser Gly Ser Phe Val Ser Ser Arg Ala Arg Arg Glu Lys
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 Lys Ser Lys Lys Gly Arg Gln Glu Ala Leu Glu Arg Leu Lys Lys Ala
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Met Cys Arg Leu Leu Gln Asp Lys Arg Tyr Gln Cys Val Tyr Ser Leu	
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Ala Glu Ile Phe Lys Val Leu Ala Ser Phe Tyr Val Ile Leu Val Ile	
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Ala Asp Gln Tyr Asp Pro Leu Tyr Ser Lys Arg Phe Ser Ile Phe Leu	
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Ser Glu Val Ser Glu Asn Lys Leu Lys Gln Ile Asn Leu Asn Asn Glu	
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Tyr Ala Ser Asn Lys Thr Trp Val Leu Thr Pro Lys Val Pro Glu Gly
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Ile Asp Ile Phe Phe Ala Gln Thr Trp Tyr Asp Arg Arg Leu Lys Phe
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His Trp Ile Thr Thr Pro Asn Arg Met Leu Arg Ile Trp Asn Asp Gly	
161 166 171 176	
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Arg Val Leu Tyr Ser Leu Arg Leu Thr Ile Asp Ala Glu Cys Gln Leu	
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caa ttg cac aat ttt cca atg gat gaa cac tcc tgc ccc ttg gag ttc	1102
Gln Leu His Asn Phe Pro Met Asp Glu His Ser Cys Pro Leu Glu Phe	
193 198 203 208	
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Ser Ser Tyr Gly Tyr Pro Arg Glu Glu Ile Val Tyr Gln Trp Lys Arg	
209 214 219 224	
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Ser Ser Val Glu Val Gly Asp Thr Arg Ser Trp Arg Leu Tyr Gln Phe	
225 230 235 240	
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Ser Phe Val Gly Leu Arg Asn Thr Thr Glu Val Val Lys Thr Thr Ser	
241 246 251 256	
gga gat tat gtg gtc atg tct gtc tac ttt gat ctg agc aga aga atg	1294
Gly Asp Tyr Val Val Met Ser Val Tyr Phe Asp Leu Ser Arg Arg Met	
257 262 267 272	
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Gly Tyr Phe Thr Ile Gln Thr Tyr Ile Pro Cys Thr Leu Ile Val Val	
273 278 283 288	
cta tcc tgg gtg tct ttc tgg atc aat aag gat gct gtt cca gcc aga	1390
Leu Ser Trp Val Ser Phe Trp Ile Asn Lys Asp Ala Val Pro Ala Arg	
289 294 299 304	
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Thr Ser Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Leu Ser Thr	
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Ile Ala Arg Lys Ser Leu Pro Lys Val Ser Tyr Val Thr Ala Met Asp	
321 326 331 336	
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Leu Phe Val Ser Val Cys Phe Ile Phe Val Phe Ser Ala Leu Val Glu	
337 342 347 352	
tat ggc acc ttg cat tat ttt gtc agc aac cgg aaa cca agc aag gac	1582

Tyr Gly Thr Leu His	Tyr Phe Val Ser Asn Arg Lys Pro Ser Lys Asp	
353	358	363 368
aaa gat aaa aag aag	aaa aac cct gcc cct acc att gat atc cgc cca	1630
Lys Asp Lys Lys Lys	Lys Asn Pro Ala Pro Thr Ile Asp Ile Arg Pro	
369	374 379	384
aga tca gca acc att	caa atg aat aat gct aca cac ctt caa gag aga	1678
Arg Ser Ala Thr Ile	Gln Met Asn Asn Ala Thr His Leu Gln Glu Arg	
385	390	395 400
gat gaa gag tac ggc	tat gag tgt ctg gac ggc aag gac tgt gcc agt	1726
Asp Glu Glu Tyr Gly	Tyr Glu Cys Leu Asp Gly Lys Asp Cys Ala Ser	
401	406	411 416
ttt ttc tgc tgt ttt	gaa gat tgt cga aca gga gct tgg aga cat ggg	1774
Phe Phe Cys Cys Phe	Glu Asp Cys Arg Thr Gly Ala Trp Arg His Gly	
417	422	427 432
agg ata cat atc cgc	att gcc aaa atg gac tcc tat gct cgg atc ttc	1822
Arg Ile His Ile Arg	Ile Ala Lys Met Asp Ser Tyr Ala Arg Ile Phe	
433	438	443 448
ttc ccc act gcc ttc	tgc ctg ttt aat ctg gtc tat tgg gtc tcc tac	1870
Phe Pro Thr Ala Phe	Cys Leu Phe Asn Leu Val Tyr Trp Val Ser Tyr	
449	454	459 464
ctc tac ctg tga gga	ggatatgggtt ttactgatat gggtcttatt cactgagtct	1925
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Met Gly Ser Ser Gln Ser Val Glu Ile Pro Gly Gly Gly	
/ 1 5 10	
acc gag ggc tac cac gtt ctg cgg gta caa gaa aat tcc cca gga cac	158
Thr Glu Gly Tyr His Val Leu Arg Val Gln Glu Asn Ser Pro Gly His	
14 19 24 29	

aga gct ggt ttg gag cct ttc ttt gat ttt att gtt tct att aat ggt	206
Arg Ala Gly Leu Glu Pro Phe Phe Asp Phe Ile Val Ser Ile Asn Gly	
30 35 40 45	
tca aga tta aat aaa gac aat gac act ctt aag gat ctg ctg aaa gca	254
Ser Arg Leu Asn Lys Asp Asn Asp Thr Leu Lys Asp Leu Leu Lys Ala	
46 51 56 61	
aac gtt gaa aag cct gta aag atg ctt atc tat agc agc aaa aca ttg	302
Asn Val Glu Lys Pro Val Lys Met Leu Ile Tyr Ser Ser Lys Thr Leu	
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gaa ctg cga gag acc tca gtc aca cca agt aac ctg tgg ggc ggc cag	350
Glu Leu Arg Glu Thr Ser Val Thr Pro Ser Asn Leu Trp Gly Gly Gln	
78 83 88 93	
ggc tta ttg gga gtg agc att cgt ttc tgc agc ttt gat ggg gca aat	398
Gly Leu Leu Gly Val Ser Ile Arg Phe Cys Ser Phe Asp Gly Ala Asn	
94 99 104 109	
gaa aat gtt tgg cat gtg ctg gag gtg gaa tca aat tct cct gca gca	446
Glu Asn Val Trp His Val Leu Glu Val Glu Ser Asn Ser Pro Ala Ala	
110 115 120 125	
ctg gca ggt ctt aga cca cac agt gat tat ata att gga gca gat aca	494
Leu Ala Gly Leu Arg Pro His Ser Asp Tyr Ile Ile Gly Ala Asp Thr	
126 131 136 141	
gtc atg aat gag tct gaa gat cta ttc agc ctt atc gaa aca cat gaa	542
Val Met Asn Glu Ser Glu Asp Leu Phe Ser Leu Ile Glu Thr His Glu	
142 147 152 157	
gca aaa cca ttg aaa ctg tat gtg tac aac aca gac act gat aac tgt	590
Ala Lys Pro Leu Lys Leu Tyr Val Tyr Asn Thr Asp Thr Asp Asn Cys	
158 163 168 173	
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Arg Glu Val Ile Ile Thr Pro Asn Ser Ala Trp Gly Gly Glu Gly Ser	
174 179 184 189	
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Leu Gly Cys Gly Ile Gly Tyr Gly Tyr Leu His Arg Ile Pro Thr Arg	
190 195 200 205	
cca ttt gag gaa gga aag aaa att tct ctt cca gga caa atg gct ggt	734
Pro Phe Glu Glu Gly Lys Lys Ile Ser Leu Pro Gly Gln Met Ala Gly	
206 211 216 221	
aca cct att aca cct ctt aaa gat ggg ttt aca gag gtc cag ctg tcc	782
Thr Pro Ile Thr Pro Leu Lys Asp Gly Phe Thr Glu Val Gln Leu Ser	
222 227 232 237	
tca gtt aat ccc ccg tct ttg tca cca cca gga act aca gga att gaa	830
Ser Val Asn Pro Pro Ser Leu Ser Pro Pro Gly Thr Thr Gly Ile Glu	
238 243 248 253	

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Gln Ser Leu Thr Gly Leu Ser Ile Ser Ser Thr Pro Pro Ala Val Ser	
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Ser Val Leu Ser Thr Gly Val Pro Thr Val Pro Leu Leu Pro Pro Gln	
270 275 280 285	
gta aac cag tcc ctc act tct gtg cca cca atg aat cca gct act aca	974
Val Asn Gln Ser Leu Thr Ser Val Pro Pro Met Asn Pro Ala Thr Thr	
286 291 296 301	
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Leu Pro Gly Leu Met Pro Leu Pro Ala Gly Leu Pro Asn Leu Pro Asn	
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Leu Asn Leu Arg Leu Pro Ala Pro His Ile Met Pro Gly Val Gly Leu	
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Pro Ser Phe Pro Leu Val Pro Glu Ser Ser Ser Ala Ala Ser Ser Gly	
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Ala Thr Thr Thr Ala Lys Ala Asp Ala Ala Ser Ser Leu Thr Val Asp	
398 403 408 413	
gtg acg ccc ccc act gcc aag gcc ccc acc acc gtt gag gac aga gtc	1358
Val Thr Pro Pro Thr Ala Lys Ala Pro Thr Thr Val Glu Asp Arg Val	
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Gly Asp Ser Thr Pro Val Ser Glu Lys Pro Val Ser Ala Ala Val Asp	
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Ala Asn Ala Ser Glu Ser Pro *	
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Met Gly Leu
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Val Ile Thr Glu Val Glu Gln Glu Pro Ser Phe Ser Asp Ile Glu Ser
4 9 14 19
ctc gtg gtg tgg tgt atg gcc gtg ggc atc tcc tac att agc gtc tac 273
Leu Val Val Trp Cys Met Ala Val Gly Ile Ser Tyr Ile Ser Val Tyr
20 25 30 35
gac cac caa ggt att ttc aaa aga aat aat tcc aga ttg atg gat gga 321
Asp His Gln Gly Ile Phe Lys Arg Asn Asn Ser Arg Leu Met Asp Gly
36 41 46 51
att tta aaa caa cag caa gaa ctt ctg ggc cta gat tgt tca aaa tgc 369
Ile Leu Lys Gln Gln Gln Glu Leu Leu Gly Leu Asp Cys Ser Lys Cys
52 57 62 67

tca cca gag ttt gca aat agt aat gac aaa gat gat caa gtt tta aat	417
Ser Pro Glu Phe Ala Asn Ser Asn Asp Lys Asp Asp Gln Val Leu Asn	
68 73 78 83	
tgc cat ttg gca gtg aag gtg cta tcc ccg gaa gat gga aaa gca gat	465
Cys His Leu Ala Val Lys Val Leu Ser Pro Glu Asp Gly Lys Ala Asp	
84 89 94 99	
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Ile Val Arg Ala Ala Gln Asp Phe Cys Gln Leu Val Ala Gln Lys Gln	
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agg aga ccc aaa gat ttg gat gta gat atg tta gtt tac tca gtt caa	561
Arg Arg Pro Lys Asp Leu Asp Val Asp Met Leu Val Tyr Ser Val Gln	
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Met Val Val Leu Ile Leu Ile *	
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Ser Pro Glu Pro Val Gly Pro Pro Ala Pro Gly Leu Pro Phe Cys Cys
13 18 23 28

gga gga tcc ctg ctg gcg gtt gtg gtg ctg ctt gcg ctg ccg gtg gcc 144
Gly Gly Ser Leu Leu Ala Val Val Val Leu Leu Ala Leu Pro Val Ala
29 34 39 44

tgg ggt caa tgc aat gcc cca gaa tgg ctt cca ttt gcc agg cct acc 192
Trp Gly Gln Cys Asn Ala Pro Glu Trp Leu Pro Phe Ala Arg Pro Thr
45 50 55 60

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Asn Leu Thr Asp Glu Phe Glu Phe Pro Ile Gly Thr Tyr Leu Asn Tyr
61 66 71 76

gaa tgc cgc cct ggt tat tcc gga aga ccg ttt tct atc atc tgc cta 288
Glu Cys Arg Pro Gly Tyr Ser Gly Arg Pro Phe Ser Ile Ile Cys Leu
77 82 87 92

aaa aac tca gtc tgg act ggt gct aag gac agg tgc aga cgt aaa tca 336
Lys Asn Ser Val Trp Thr Gly Ala Lys Asp Arg Cys Arg Arg Lys Ser
93 98 103 108

tgt cgt aat cct cca gat cct gtg aat ggc atg gtg cat gtg atc aaa 384
Cys Arg Asn Pro Pro Asp Pro Val Asn Gly Met Val His Val Ile Lys

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109	114	119	124	
ggc atc cag ttc gga tcc caa att aaa tat tct tgt act aaa gga tac				432
Gly Ile Gln Phe Gly Ser Gln Ile Lys Tyr Ser Cys Thr Lys Gly Tyr				
125	130	135	140	
cga ctc att ggt tcc tcg tct gcc aca tgc atc atc tca ggt gat act				480
Arg Leu Ile Gly Ser Ser Ser Ala Thr Cys Ile Ile Ser Gly Asp Thr				
141	146	151	156	
gtc att tgg gat aat gaa aca cct att tgt gac aga att cct tgt ggg				528
Val Ile Trp Asp Asn Glu Thr Pro Ile Cys Asp Arg Ile Pro Cys Gly				
157	162	167	172	
cta ccc ccc acc atc acc aat gga gat ttc att agc acc aac aga gag				576
Leu Pro Pro Thr Ile Thr Asn Gly Asp Phe Ile Ser Thr Asn Arg Glu				
173	178	183	188	
aat ttt cac tat gga tca gtg gtg acc tac cgc tgc aat cct gga agc				624
Asn Phe His Tyr Gly Ser Val Val Thr Tyr Arg Cys Asn Pro Gly Ser				
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gga ggg aga aag gtg ttt gag ctt gtg ggt gag ccc tcc ata tac tgc				672
Gly Gly Arg Lys Val Phe Glu Leu Val Gly Glu Pro Ser Ile Tyr Cys				
205	210	215	220	
acc agc aat gac gat caa gtg ggc atc tgg agc ggc ccc gcc cct cag				720
Thr Ser Asn Asp Asp Gln Val Gly Ile Trp Ser Gly Pro Ala Pro Gln				
221	226	231	236	
tgc att ata cct aac aaa tgc acg cct cca aat gtg gaa aat gga ata				768
Cys Ile Ile Pro Asn Lys Cys Thr Pro Pro Asn Val Glu Asn Gly Ile				
237	242	247	252	
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Leu Val Ser Asp Asn Arg Ser Leu Phe Ser Leu Asn Glu Val Val Glu				
253	258	263	268	
ttt agg tgt cag cct ggc ttt gtc atg aaa gga ccc cgc cgt gtg aag				864
Phe Arg Cys Gln Pro Gly Phe Val Met Lys Gly Pro Arg Arg Val Lys				
269	274	279	284	
tgc cag gcc ctg aac aaa tgg gag ccg gag cta cca agc tgc tcc agg				912
Cys Gln Ala Leu Asn Lys Trp Glu Pro Glu Leu Pro Ser Cys Ser Arg				
285	290	295	300	
gta tgt cag cca cct cca gat gtc ctg cat gct gag cgt acc caa agg				960
Val Cys Gln Pro Pro Pro Asp Val Leu His Ala Glu Arg Thr Gln Arg				
301	306	311	316	
gac aag gac aac ttt tca cct ggg cag gaa gtg ttc tac agc tgt gag				1008
Asp Lys Asp Asn Phe Ser Pro Gly Gln Glu Val Phe Tyr Ser Cys Glu				
317	322	327	332	
ccc ggc tac gac ctg aga ggg gct gcg tct atg cgc tgc aca ccc cag				1056
Pro Gly Tyr Asp Leu Arg Gly Ala Ala Ser Met Arg Cys Thr Pro Gln				
333	338	343	348	

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Gly Asp Trp Ser Pro Ala Ala Pro Thr Cys Glu Val Lys Ser Cys Asp	
349 354 359 364	
gac ttc atg ggc caa ctt ctt aat ggc cgt gtg cta ttt cca gta aat	1152
Asp Phe Met Gly Gln Leu Leu Asn Gly Arg Val Leu Phe Pro Val Asn	
365 370 375 380	
ctc cag ctt gga gca aaa gtg gat ttt gtt tgt gat gaa gga ttt caa	1200
Leu Gln Leu Gly Ala Lys Val Asp Phe Val Cys Asp Glu Gly Phe Gln	
381 386 391 396	
tta aaa ggc agc tct gct agt tac tgt gtc ttg gct gga atg gaa agc	1248
Leu Lys Gly Ser Ser Ala Ser Tyr Cys Val Leu Ala Gly Met Glu Ser	
397 402 407 412	
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Leu Trp Asn Ser Ser Val Pro Val Cys Glu Gln Ile Phe Cys Pro Ser	
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Phe Pro Phe Gly Lys Thr Val Asn Tyr Thr Cys Asp Pro His Pro Asp	
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461 466 471 476	
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Ser Asp Pro Gln Gly Asn Gly Val Trp Ser Ser Pro Ala Pro Arg Cys	
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Gly Ile Leu Gly His Cys Gln Ala Pro Asp His Phe Leu Phe Ala Lys	
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Leu Lys Thr Gln Thr Asn Ala Ser Asp Phe Pro Ile Gly Thr Ser Leu	
509 514 519 524	
aag tac gaa tgc cgt cct gag tac tac ggg agg cca ttc tct atc aca	1632
Lys Tyr Glu Cys Arg Pro Glu Tyr Tyr Gly Arg Pro Phe Ser Ile Thr	
525 530 535 540	
tgt cta gat aac ctg gtc tgg tca agt ccc aaa gat gtc tgt aaa cgt	1680
Cys Leu Asp Asn Leu Val Trp Ser Ser Pro Lys Asp Val Cys Lys Arg	
541 546 551 556	
aaa tca tgt aaa act cct cca gat cca gtg aat ggc atg gtg cat gtg	1728
Lys Ser Cys Lys Thr Pro Pro Asp Pro Val Asn Gly Met Val His Val	
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Cys Asp Asp Phe Met Gly Gln Leu Leu Asn Gly Arg Val Leu Phe Pro	
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Val Asn Leu Gln Leu Gly Ala Lys Val Asp Phe Val Cys Asp Glu Gly	
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Phe Gln Leu Lys Gly Ser Ser Ala Ser Tyr Cys Val Leu Ala Gly Met	
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Pro Ser Pro Pro Val Ile Pro Asn Gly Arg His Thr Gly Lys Pro Leu	
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Glu Val Phe Pro Phe Gly Lys Ala Val Asn Tyr Thr Cys Asp Pro His	
893 898 903 908	
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Pro Asp Arg Gly Thr Ser Phe Asp Leu Ile Gly Glu Ser Thr Ile Arg	
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Cys Thr Ser Asp Pro Gln Gly Asn Gly Val Trp Ser Ser Pro Ala Pro	
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Ser Leu Lys Tyr Glu Cys Arg Pro Glu Tyr Tyr Gly Arg Pro Phe Ser	
973 978 983 988	
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989 994 999 1004	
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Lys Arg Lys Ser Cys Lys Thr Pro Pro Asp Pro Val Asn Gly Met Val	
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His Val Ile Thr Asp Ile Gln Val Gly Ser Arg Ile Asn Tyr Ser Cys	

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Ser Gly Asn Thr Ala His Trp Ser Thr Lys Pro Pro Ile Cys Gln Arg				
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Ile Pro Cys Gly Leu Pro Pro Thr Ile Ala Asn Gly Asp Phe Ile Ser				
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Cys Thr Pro Gln Gly Asp Trp Ser Pro Glu Ala Pro Arg Cys Ala Val				
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Phe Pro Thr Gln Gly His Asp Tyr Val Leu Ala Glu Lys Gln Val Gln
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Leu Pro Pro His Ile Leu Thr Arg Leu Glu Glu Lys Lys Leu Thr Val				
433	438	443	448	
gat aag ctg aaa gac atg agg aaa gat gaa ata ggt cac att tta cat				1392
Asp Lys Leu Lys Asp Met Arg Lys Asp Glu Ile Gly His Ile Leu His				
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Ser Val Met Met Glu Ala Phe Ile Gln Pro Ile Thr Arg Thr Val Leu				
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cga gtg aca ctc agc atc tat gct gat ttc act tgg aat gat cag gta				1536
Arg Val Thr Leu Ser Ile Tyr Ala Asp Phe Thr Trp Asn Asp Gln Val				
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His Gly Thr Val Gly Glu Pro Trp Trp Ile Trp Val Glu Asp Pro Thr				
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aat gat cat att tat cat tca gag tat ttt cta gct cta aaa aaa caa				1632
Asn Asp His Ile Tyr His Ser Glu Tyr Phe Leu Ala Leu Lys Lys Gln				
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gtc att agt aaa gaa gcc caa cta ctg gta ttt aca atc cct att ttt				1680
Val Ile Ser Lys Glu Ala Gln Leu Leu Val Phe Thr Ile Pro Ile Phe				
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Glu Pro Leu Pro Ser Gln Tyr Tyr Ile Arg Ala Val Ser Asp Arg Trp				
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Leu Gly Ala Glu Ala Val Cys Ile Ile Asn Phe Gln His Leu Ile Leu				
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Pro Glu Arg His Pro Pro His Thr Glu Leu Leu Asp Leu Gln Pro Leu	
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Ser His Phe Asn Pro Val Gln Thr Gln Ile Phe His Thr Leu Tyr His	
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Lys Met Glu Lys Val Leu Ser Leu Pro Lys Pro Thr Ile Ile Leu Ser	
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gcc tac cag cga aag tgc att cag tcc atc ctg aaa gag gag ggt gaa	2217
Ala Tyr Gln Arg Lys Cys Ile Gln Ser Ile Leu Lys Glu Glu Gly Glu	

708	713	718	723	
cat ata agg gaa atg gtg aag caa atc aat gat atc cgc aat cat gta				2265
His Ile Arg Glu Met Val Lys Gln Ile Asn Asp Ile Arg Asn His Val				
724	729	734	739	
aac ttc tga caccacc aggagctgac tcacacctga actgaacacc attgaaggct				2321
Asn Phe *				
740				
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aaaaaaaaa a				2392

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agtgcttata gctaaatata ttctgggaac acttagaact tgctaattca gtattgctac	180
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aggtatatct gcaacctgga caactttggc aggttctcat ggtaaaagaa ataataccat	300
aactacaacc agttcaaaga ggaaaaacag gaaaaataaa attactccag aaaacgttca	360
aattatattt gatgatccac taccaatttc atacagtcag ccagagaagg tgaatggaga	420
gtccaagagc agcagtacca gcgagagtgg ggacagtgat aac atg agg att tcc	475
	Met Arg Ile Ser
	1
agc tgc agc gat gaa agt agt aac agc aac agc agt cgt aag agt gac	523
Ser Cys Ser Asp Glu Ser Ser Asn Ser Asn Ser Ser Arg Lys Ser Asp	
5 10 15 20	
aat cat tca cca gct gtg gtc act acc act gtg agc agc aaa aag cag	571
Asn His Ser Pro Ala Val Val Thr Thr Thr Val Ser Ser Lys Lys Gln	
21 26 31 36	
cca tca gtt ctt gtt aca ttt cca aag gaa gag aga aaa tct gtt tct	619
Pro Ser Val Leu Val Thr Phe Pro Lys Glu Glu Arg Lys Ser Val Ser	
37 42 47 52	

ggc aag gct tca ata aaa ttg tca gaa act atc agt gaa ggg acc agt Gly Lys Ala Ser Ile Lys Leu Ser Glu Thr Ile Ser Glu Gly Thr Ser 53 58 63 68	667
aat tct cta tct act tgt aca aaa tct ggt cca tct ccc ctt tct tct Asn Ser Leu Ser Thr Cys Thr Lys Ser Gly Pro Ser Pro Leu Ser Ser 69 74 79 84	715
cca aat ggg aag tta aca gta gca agt cct aag cgt ggg caa aag agg Pro Asn Gly Lys Leu Thr Val Ala Ser Pro Lys Arg Gly Gln Lys Arg 85 90 95 100	763
gaa gaa gga tgg aaa gaa gtt gta aga agg tca aag aaa gta tct gtt Glu Glu Gly Trp Lys Glu Val Val Arg Arg Ser Lys Lys Val Ser Val 101 106 111 116	811
cca tca act gtg ata tcc aga gtg att gga aga gga ggc tgt aat atc Pro Ser Thr Val Ile Ser Arg Val Ile Gly Arg Gly Gly Cys Asn Ile 117 122 127 132	859
aat gct att cgg gag ttt act ggt gca cac ata gat att gat aaa cag Asn Ala Ile Arg Glu Phe Thr Gly Ala His Ile Asp Ile Asp Lys Gln 133 138 143 148	907
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tca aca aga caa gca act caa ttg att aat gct ttg atc aag gat cca Ser Thr Arg Gln Ala Thr Gln Leu Ile Asn Ala Leu Ile Lys Asp Pro 165 170 175 180	1003
gac aaa gaa att gat gaa ctt att cca aag aat cgt ttg aaa agc tcc Asp Lys Glu Ile Asp Glu Leu Ile Pro Lys Asn Arg Leu Lys Ser Ser 181 186 191 196	1051
tca gca aat tcc aaa ata ggg tca tca gca cct acc acc act gct gct Ser Ala Asn Ser Lys Ile Gly Ser Ser Ala Pro Thr Thr Thr Ala Ala 197 202 207 212	1099
aac act tcc tta atg gga att aaa atg aca act gta gct ctg tca tca Asn Thr Ser Leu Met Gly Ile Lys Met Thr Thr Val Ala Leu Ser Ser 213 218 223 228	1147
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tcc act cac aaa acc att aag aac cca gtg aat aat gtg agg cct ggt Ser Thr His Lys Thr Ile Lys Asn Pro Val Asn Asn Val Arg Pro Gly 245 250 255 260	1243
ttt cca gtt tct ctt cca tta gca tat cct cct cca cag ttt gca cat Phe Pro Val Ser Leu Pro Leu Ala Tyr Pro Pro Pro Gln Phe Ala His 261 266 271 276	1291
gct ttg ctt gct gct cag act ttc cag cag atc cgt cca cca agg ttg	1339

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Val Arg Met Thr Val Pro Pro Leu Ala Thr Ser Ser Ala Pro Val Ala				
517	522	527	532	
gtg cct tct act gcc cca gtg act tac cct atg cct cag aca cca atg				2107
Val Pro Ser Thr Ala Pro Val Thr Tyr Pro Met Pro Gln Thr Pro Met				
533	538	543	548	
gga tgc ccc cag cct act cct aaa atg gaa acc cct gct att aga cca				2155
Gly Cys Pro Gln Pro Thr Pro Lys Met Glu Thr Pro Ala Ile Arg Pro				
549	554	559	564	
ccc cct cat gcc aca act gcc cct cac aag aat tca gct tca gtg caa				2203
Pro Pro His Gly Thr Thr Ala Pro His Lys Asn Ser Ala Ser Val Gln				
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aat tca tct gtt gca gtc ctc agt gtc aat cac att aaa aga cct cac				2251
Asn Ser Ser Val Ala Val Leu Ser Val Asn His Ile Lys Arg Pro His				
581	586	591	596	
agt gtt ccc tct tct gtc cag cta cct tcg acc tta agt aca caa agt				2299
Ser Val Pro Ser Ser Val Gln Leu Pro Ser Thr Leu Ser Thr Gln Ser				
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gct tgt cag aat tca gta cat cca gca aat aag cct att gct ccc aat				2347
Ala Cys Gln Asn Ser Val His Pro Ala Asn Lys Pro Ile Ala Pro Asn				
613	618	623	628	
ttc agt gcc ccc tta cca ttt ggg ccc ttt agc aca ttg ttt gaa aac				2395
Phe Ser Ala Pro Leu Pro Phe Gly Pro Phe Ser Thr Leu Phe Glu Asn				
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agc cct act tct gct cat gcc ttc tgg gga gga tct gtt gtt tca tct				2443
Ser Pro Thr Ser Ala His Ala Phe Trp Gly Gly Ser Val Val Ser Ser				
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cag tca aca cca gaa tct atg cta tca gga aaa tcc tca tat ttg cca				2491
Gln Ser Thr Pro Glu Ser Met Leu Ser Gly Lys Ser Ser Tyr Leu Pro				
661	666	671	676	
aat tca gat cct tta cat cag tct gat act tcc aaa gct cca ggt ttt				2539
Asn Ser Asp Pro Leu His Gln Ser Asp Thr Ser Lys Ala Pro Gly Phe				
677	682	687	692	
aga cca cca tta cag aga cct gct cca agt ccc tca ggt att gtc aat				2587
Arg Pro Pro Leu Gln Arg Pro Ala Pro Ser Pro Ser Gly Ile Val Asn				
693	698	703	708	
atg gac tcg cca tat ggt tct gta aca cct tct tca aca cat ttg gga				2635
Met Asp Ser Pro Tyr Gly Ser Val Thr Pro Ser Ser Thr His Leu Gly				
709	714	719	724	
aac ttt gct tca aac att tca gga ggt cag atg tac gga cct ggg gca				2683
Asn Phe Ala Ser Asn Ile Ser Gly Gly Gln Met Tyr Gly Pro Gly Ala				
725	730	735	740	

ccc ctt gga gga gca ccc gca gct gct aac ttt aac aga caa cat ttt Pro Leu Gly Gly Ala Pro Ala Ala Ala Asn Phe Asn Arg Gln His Phe 741 746 751 756	2731
tcc ccg ctt agt ttg ttg act ccg tgt tca tca gca tca aat gat tct Ser Pro Leu Ser Leu Leu Thr Pro Cys Ser Ser Ala Ser Asn Asp Ser 757 762 767 772	2779
tct gca cag tca gta tcc tcg gga gtt cgt gca cca tct cct gcc cca Ser Ala Gln Ser Val Ser Ser Gly Val Arg Ala Pro Ser Pro Ala Pro 773 778 783 788	2827
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agg aaa gtt cca gtc cct att ggg act gaa cgt tct gca cgt atc agg Arg Lys Val Pro Val Pro Ile Gly Thr Glu Arg Ser Ala Arg Ile Arg 805 810 815 820	2923
caa act gga acg tca gct cca tct gtt att ggg agc aat ttg tct aca Gln Thr Gly Thr Ser Ala Pro Ser Val Ile Gly Ser Asn Leu Ser Thr 821 826 831 836	2971
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cac aga ccg atg tct gac cca gga gta ttt tca caa cat caa gca atg His Arg Pro Met Ser Asp Pro Gly Val Phe Ser Gln His Gln Ala Met 869 874 879 884	3115
gag cga gat agt aca gga att gta act cct tct ggt aca ttc cat cag Glu Arg Asp Ser Thr Gly Ile Val Thr Pro Ser Gly Thr Phe His Gln 885 890 895 900	3163
cat gtt cct gca ggc tac atg gac ttt cct aaa gtt ggg ggt atg cct His Val Pro Ala Gly Tyr Met Asp Phe Pro Lys Val Gly Gly Met Pro 901 906 911 916	3211
ttt tct gtg tat ggg aat gca atg att cct cca gta gca cct atc cct Phe Ser Val Tyr Gly Asn Ala Met Ile Pro Pro Val Ala Pro Ile Pro 917 922 927 932	3259
gat ggt gct gga gga ccc ata ttt aat ggc cct cat gct gca gac cct Asp Gly Ala Gly Gly Pro Ile Phe Asn Gly Pro His Ala Ala Asp Pro 933 938 943 948	3307
tct tgg aac tca ctg ata aag atg gtt tcc agc tcc acg gaa aat aat Ser Trp Asn Ser Leu Ile Lys Met Val Ser Ser Ser Thr Glu Asn Asn 949 954 959 964	3355

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5006

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gttctcccaa aagcc atg tcc cgg ccc ttg ctc atc acc ttc acc cca gcc	651
Met Ser Arg Pro Leu Leu Ile Thr Phe Thr Pro Ala	
1 5 10	
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Thr Asp Pro Ser Asp Leu Trp Lys Asp Gly Gln Gln Gln Pro Gln Pro	
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Glu Lys Pro Glu Ser Thr Leu Asp Gly Ala Ala Ala Arg Ala Phe Tyr	
29 34 39 44	
gag gcc ctg att ggg gat gag agc agc gct cct gac tcc cag aga tct	795
Glu Ala Leu Ile Gly Asp Glu Ser Ser Ala Pro Asp Ser Gln Arg Ser	
45 50 55 60	

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Ala Pro Gln Pro Arg Val Thr His Phe Pro Ala Trp Asp Thr Arg Ala																
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Val Ala Gly Arg Glu Arg Pro Pro Arg Val Ala Thr Leu Ser Trp Arg																
317					322					327					332	
gag gag aga agg agg gag gag aaa gac agg gct tgg gag cgg gat cta																1659
Glu Glu Arg Arg Arg Glu Glu Lys Asp Arg Ala Trp Glu Arg Asp Leu																
333					338					343					348	
agg act tac atg aac ctc gag ttc tga ctttg gtaaagtctg accctagtct																1711
Arg Thr Tyr Met Asn Leu Glu Phe *																
349					354											
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Met Lys Leu Ile Ser Asn Gly Gly Asp Ser Ala																
1 5																
gta gaa atg gat cgg aga aat gtg tct gaa ttt aag agt att aaa aaa																339
Val Glu Met Asp Arg Arg Asn Val Ser Glu Phe Lys Ser Ile Lys Lys																
12					17					22					27	
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Thr Ser Leu Ile Lys Asn Cys Asp Ser Lys Ser Gln Lys Tyr Asn Cys																
28					33					38					43	

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60 65 70 75	
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76 81 86 91	
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92 97 102 107	
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108 113 118 123	
tca aca ttt agc agt cag tta tta aat ctt ggg agt tat tca tct att Ser Thr Phe Ser Ser Gln Leu Leu Asn Leu Gly Ser Tyr Ser Ser Ile	675
124 129 134 139	
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140 145 150 155	
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156 161 166 171	
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188 193 198 203	
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204 209 214 219	
aaa aaa gtt atg tta aca gtg gaa cag gcc caa gat caa cat tat gcg Lys Lys Val Met Leu Thr Val Glu Gln Ala Gln Asp Gln His Tyr Ala	963
220 225 230 235	
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236 241 246 251	
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252 257 262 267	

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Tyr Thr Leu Glu Asn Leu Glu Leu His Thr Thr Pro Trp Ser Ser Cys	
268 273 278 283	
gag tgc ttg ttt gat gat gat ata agg gca att aca ttt aaa gca aaa	1155
Glu Cys Leu Phe Asp Asp Asp Ile Arg Ala Ile Thr Phe Lys Ala Lys	
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Phe Gln Lys Ser Ala Pro Ser Phe Val Lys Ile Ser Asp Leu Ala Thr	
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His Leu Glu Asp Lys Cys Ser Gly Val Val Leu Ile Lys Ala Gln Ile	
316 321 326 331	
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Ser Glu Leu Ala Phe Pro Ile Thr Ala Ser Gln Lys Ile Ala Leu Asn	
332 337 342 347	
gct cac agt tct ctg aag agt att ttt tct tct ctt ccc aac atc gta	1347
Ala His Ser Ser Leu Lys Ser Ile Phe Ser Ser Leu Pro Asn Ile Val	
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Tyr Thr Gly Cys Ala Lys Cys Gly Leu Glu Leu Glu Thr Asp Glu Asn	
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Arg Ile Tyr Lys Gln Cys Phe Ser Cys Leu Pro Phe Thr Met Lys Lys	
380 385 390 395	
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Ile Tyr Tyr Arg Pro Ala Leu Met Thr Ala Ile Asp Gly Arg His Asp	
396 401 406 411	
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Val Cys Ile Arg Val Glu Ser Lys Leu Ile Glu Lys Ile Leu Leu Asn	
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Ile Ser Ala Asp Cys Leu Asn Arg Val Ile Val Pro Ser Ser Glu Ile	
428 433 438 443	
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Ser Ala Glu Pro Cys Val Leu Lys Ile Gln Ser Leu Phe Val Leu Asp	
460 465 470 475	
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Glu Asn Ser Tyr Pro Leu Gln Gln Asp Phe Ser Leu Leu Asp Phe Tyr	
476 481 486 491	
cct gac att gta aag cat gga gcc aat gcc cgt ctc tga ggccagagga	1780

Pro Asp Ile Val Lys His Gly Ala Asn Ala Arg Leu *

492

497

502

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<213> Homo sapiens

<220>

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<222> (237)..(1502)

<400> 265

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agcggcgccg cgggagttcc gcaggtttcc cgtgttcgca gcgagccgg aggccagctg 180
aaccggccg tgggatcccg gataggagga ggaggggacc cataggacgc gttaac 236
atg gac ctg gaa aac aaa gtg aag aag atg ggc tta ggt cac gag caa 284
Met Asp Leu Glu Asn Lys Val Lys Lys Met Gly Leu Gly His Glu Gln
1 5 10 15
gga ttt gga gcc cct tgt tta aaa tgc aaa gaa aaa tgt gaa gga ttc 332
Gly Phe Gly Ala Pro Cys Leu Lys Cys Lys Glu Lys Cys Glu Gly Phe

17	22	27	32	
gaa ctg cac ttc tgg aga aaa ata tgt cgt aac tgc aag tgt ggc caa				380
Glu Leu His Phe Trp Arg Lys Ile Cys Arg Asn Cys Lys Cys Gly Gln				
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gaa gag cat gat gtc ctc ttg agc aat gaa gag gat cga aaa gtg gga				428
Glu Glu His Asp Val Leu Leu Ser Asn Glu Glu Asp Arg Lys Val Gly				
49	54	59	64	
aaa ctt ttt gaa gac acc aag tat acc act ctg att gca aaa cta aag				476
Lys Leu Phe Glu Asp Thr Lys Tyr Thr Thr Leu Ile Ala Lys Leu Lys				
65	70	75	80	
tca gat gga att ccc atg tat aaa cgc aat gtt atg ata ttg acg aat				524
Ser Asp Gly Ile Pro Met Tyr Lys Arg Asn Val Met Ile Leu Thr Asn				
81	86	91	96	
cca gtt gct gcc aag aag aat gtc tcc atc aat aca gtt acc tat gag				572
Pro Val Ala Ala Lys Lys Asn Val Ser Ile Asn Thr Val Thr Tyr Glu				
97	102	107	112	
tgg gct cct cct gtc cag aat caa gca ttg gcc agg cag tac atg cag				620
Trp Ala Pro Pro Val Gln Asn Gln Ala Leu Ala Arg Gln Tyr Met Gln				
113	118	123	128	
atg cta ccc aag gaa aag cag cca gta gca ggc tca gag ggg gca cag				668
Met Leu Pro Lys Glu Lys Gln Pro Val Ala Gly Ser Glu Gly Ala Gln				
129	134	139	144	
tac cgg aag aag cag ctg gca aag cag ctc cct gca cat gac cag gac				716
Tyr Arg Lys Lys Gln Leu Ala Lys Gln Leu Pro Ala His Asp Gln Asp				
145	150	155	160	
cct tca aag tgc cat gag ttg tct ccc aga gag gtg aag gag atg gag				764
Pro Ser Lys Cys His Glu Leu Ser Pro Arg Glu Val Lys Glu Met Glu				
161	166	171	176	
cag ttt gtg aag aaa tat aag agc gaa gct ctg gga gta gga gat gtc				812
Gln Phe Val Lys Lys Tyr Lys Ser Glu Ala Leu Gly Val Gly Asp Val				
177	182	187	192	
aaa ctt ccc tgt gag atg gat gcc caa ggc ccc aaa caa atg aac att				860
Lys Leu Pro Cys Glu Met Asp Ala Gln Gly Pro Lys Gln Met Asn Ile				
193	198	203	208	
cct gga ggg gat aga agc acc cca gca gca gtg ggg gcc atg gag gac				908
Pro Gly Gly Asp Arg Ser Thr Pro Ala Ala Val Gly Ala Met Glu Asp				
209	214	219	224	
aaa tct gct gag cac aaa aga act caa tat tcc tgc tat tgc tgc aaa				956
Lys Ser Ala Glu His Lys Arg Thr Gln Tyr Ser Cys Tyr Cys Cys Lys				
225	230	235	240	
ctg agt atg aaa gaa ggt gac cca gcc atc tat gcc gaa agg gct ggc				/ 1004
Leu Ser Met Lys Glu Gly Asp Pro Ala Ile Tyr Ala Glu Arg Ala Gly				
241	246	251	256	

tat gat aaa ctg tgg cac cca gct tgt ttt gtc tgc agc acc tgc cat	1052
Tyr Asp Lys Leu Trp His Pro Ala Cys Phe Val Cys Ser Thr Cys His	
257 262 267 272	
gaa ctc ctg gtt gac atg att tat ttt tgg aag aat gag aag cta tac	1100
Glu Leu Leu Val Asp Met Ile Tyr Phe Trp Lys Asn Glu Lys Leu Tyr	
273 278 283 288	
tgt ggc aga cat tac tgt gac agc gag aaa ccc cga tgt gct ggc tgt	1148
Cys Gly Arg His Tyr Cys Asp Ser Glu Lys Pro Arg Cys Ala Gly Cys	
289 294 299 304	
gac gag ctg ata ttc agc aat gag tat acc cag gca gaa aac cag aat	1196
Asp Glu Leu Ile Phe Ser Asn Glu Tyr Thr Gln Ala Glu Asn Gln Asn	
305 310 315 320	
tgg cac ctg aaa cac ttc tgc tgc ttt gac tgt gat agc att cta gct	1244
Trp His Leu Lys His Phe Cys Cys Phe Asp Cys Asp Ser Ile Leu Ala	
321 326 331 336	
ggg gag ata tac gtg atg gtc aat gac aag ccc gtg tgc aag ccc tgc	1292
Gly Glu Ile Tyr Val Met Val Asn Asp Lys Pro Val Cys Lys Pro Cys	
337 342 347 352	
tat gtg aag aat cac gct gtg gtg tgt caa gga tgc cac aat gcc atc	1340
Tyr Val Lys Asn His Ala Val Val Cys Gln Gly Cys His Asn Ala Ile	
353 358 363 368	
gac cca gaa gtg cag cgg gtg acc tat aac aat ttc agc tgg cat gca	1388
Asp Pro Glu Val Gln Arg Val Thr Tyr Asn Asn Phe Ser Trp His Ala	
369 374 379 384	
tcc aca gag tgc ttt ctg tgc tct tgc tgc agc aaa tgc ctc att ggg	1436
Ser Thr Glu Cys Phe Leu Cys Ser Cys Cys Ser Lys Cys Leu Ile Gly	
385 390 395 400	
cag aag ttc atg cca gta gaa ggg atg gtt ttc tgt tca gtg gaa tgt	1484
Gln Lys Phe Met Pro Val Glu Gly Met Val Phe Cys Ser Val Glu Cys	
401 406 411 416	
aag aag agg atg tct tag gaggag ggcacccaga agtatcgagc catagctatc	1538
Lys Lys Arg Met Ser *	
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cagaggggaag cctgctccct gagggctttt tctcaggccc aatagatcag ggtaatcatt	180
accaa atg agg agg aaa gga cga tgt cat cga ggc tct gca gcg agg	227
Met Arg Arg Lys Gly Arg Cys His Arg Gly Ser Ala Ala Arg	
1 5 10	
cat cct tct tcc cca tgc agt gtt aaa cac tcc cct acg cga gaa acg	275
His Pro Ser Ser Pro Cys Ser Val Lys His Ser Pro Thr Arg Glu Thr	
15 20 25 30	
ctg acc tac gct caa gct caa agg atg gta gag ata gaa att gaa ggg	323
Leu Thr Tyr Ala Gln Ala Gln Arg Met Val Glu Ile Glu Ile Glu Gly	
31 36 41 46	
cgc ttg cac agg atc agt att ttt gat ccc ctg gag atc ata ttg gaa	371
Arg Leu His Arg Ile Ser Ile Phe Asp Pro Leu Glu Ile Ile Leu Glu	
47 52 57 62	
gat gac ctc act gct caa gag atg agt gag tgc aac agc aac aag gaa	419
Asp Asp Leu Thr Ala Gln Glu Met Ser Glu Cys Asn Ser Asn Lys Glu	
63 68 73 78	
aac agc gag cgg cct cct gtc tgc tta aga act aag cgt cac aaa aac	467
Asn Ser Glu Arg Pro Pro Val Cys Leu Arg Thr Lys Arg His Lys Asn	
79 84 89 94	
aac aga gtc aaa aag aaa aac gag gcc ctc ccc agc gcc cac ggc acg	515
Asn Arg Val Lys Lys Lys Asn Glu Ala Leu Pro Ser Ala His Gly Thr	
95 100 105 110	
ccg gcc tcg gcc agt gcc ctc ccg gag ccc aag gtg cgc atc gtg gag	563
Pro Ala Ser Ala Ser Ala Leu Pro Glu Pro Lys Val Arg Ile Val Glu	
111 116 121 126	
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Tyr Ser Pro Pro Ser Ala Pro Arg Arg Pro Pro Val Tyr Tyr Lys Phe	
127 132 137 142	
atc gag aag tcg gcc gag gaa ctg gac aac gag gtg gag tat gac atg	659
Ile Glu Lys Ser Ala Glu Glu Leu Asp Asn Glu Val Glu Tyr Asp Met	
143 148 153 158	
gac gag gag gac tat gcc tgg ctg gag atc gtc aat gag aag cgc aag	707
Asp Glu Glu Asp Tyr Ala Trp Leu Glu Ile Val Asn Glu Lys Arg Lys	
159 164 169 174	
ggc gac tgc gtc ccc gcc gtg tcg cag agc atg ttt gag ttc ctg atg	755
Gly Asp Cys Val Pro Ala Val Ser Gln Ser Met Phe Glu Phe Leu Met	

175	180	185	190	
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tgt gtg ctg tgc ccc aac aag ggt ggt gcc ttc aaa aag aca gat gac Cys Val Leu Cys Pro Asn Lys Gly Gly Ala Phe Lys Lys Thr Asp Asp 271 276 281 286				1043
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ttt gcc aac acg gtg ttc atc gag ccc atc gat ggg gtg agg aac atc Phe Ala Asn Thr Val Phe Ile Glu Pro Ile Asp Gly Val Arg Asn Ile 303 308 313 318				1139
cct cca gcc cgg tgg aaa ctg aca tgc tac ctc tgt aag cag aag ggc Pro Pro Ala Arg Trp Lys Leu Thr Cys Tyr Leu Cys Lys Gln Lys Gly 319 324 329 334				1187
gtg ggt gcc tgc atc cag tgc cac aaa gca aac tgc tac aca gca ttc Val Gly Ala Cys Ile Gln Cys His Lys Ala Asn Cys Tyr Thr Ala Phe 335 340 345 350				1235
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gct tac tgt gat gtc cac acg cct cca ggc tgc acc cgg agg cct ctg Ala Tyr Cys Asp Val His Thr Pro Pro Gly Cys Thr Arg Arg Pro Leu 383 388 393 398				1379
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Val Cys Ala Pro Tyr Ile Pro Pro Gln Arg Leu Asn Arg Ile Ala Asn	
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Gln Val Ala Ile Gln Arg Lys Lys Gln Phe Val Glu Arg Ala His Ser	
463 468 473 478	
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Tyr Trp Leu Leu Lys Arg Leu Ser Arg Asn Gly Ala Pro Leu Leu Arg	
479 484 489 494	
cgg ctg cag tcc agc ctg cag tct cag cga agc tca cag cag aga gaa	1715
Arg Leu Gln Ser Ser Leu Gln Ser Gln Arg Ser Ser Gln Gln Arg Glu	
495 500 505 510	
aat gat gag gag atg aag gct gcc aaa gag aag ctg aag tac tgg cag	1763
Asn Asp Glu Glu Met Lys Ala Ala Lys Glu Lys Leu Lys Tyr Trp Gln	
511 516 521 526	
cgg ctg cgg cac gac ctg gag cgc gct cgc ctg ctg atc gag ctg ctg	1811
Arg Leu Arg His Asp Leu Glu Arg Ala Arg Leu Leu Ile Glu Leu Leu	
527 532 537 542	
cgc aag cgg gag aag ctc aag cgt gag cag gtg aag gtg gag cag gtc	1859
Arg Lys Arg Glu Lys Leu Lys Arg Glu Gln Val Lys Val Glu Gln Val	
543 548 553 558	
gcc atg gag ctg cgg ctg acc ccg ctg acg gtg ctg ctg cgc tca gtg	1907
Ala Met Glu Leu Arg Leu Thr Pro Leu Thr Val Leu Leu Arg Ser Val	
559 564 569 574	
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Leu Asp Gln Leu Gln Asp Lys Asp Pro Ala Arg Ile Phe Ala Gln Pro	
575 580 585 590	
gtg agt ctg aag gag gta cca gat tat ttg gat cac att aaa cat ccc	2003
Val Ser Leu Lys Glu Val Pro Asp Tyr Leu Asp His Ile Lys His Pro	
591 596 601 606	
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Met Asp Phe Ala Thr Met Arg Lys Arg Leu Glu Ala Gln Gly Tyr Lys	
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aac ctc cat gag ttt gag gag gat ttt gat ctc att ata gat aac tgc	2099
Asn Leu His Glu Phe Glu Glu Asp Phe Asp Leu Ile Ile Asp Asn Cys	
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ctg cgc gat cag gga ggt gtt gtt ctg agg cag gcc cgg cgc gag gtg Leu Arg Asp Gln Gly Gly Val Val Leu Arg Gln Ala Arg Arg Glu Val 655 660 665 670	2195
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ttg ctg gac ccc gcc aac aga gcc cac ctg ggc ctg gag gag cag ctg Leu Leu Asp Pro Ala Asn Arg Ala His Leu Gly Leu Glu Glu Gln Leu 703 708 713 718	2339
aga gag ctg ctg gac atg ctc gac ctc acc tgc gct atg aag tcc agc Arg Glu Leu Leu Asp Met Leu Asp Leu Thr Cys Ala Met Lys Ser Ser 719 724 729 734	2387
ggc tcc cgg agc aag cgg gca aag ctg ctc aaa aag gaa att gcc ctt Gly Ser Arg Ser Lys Arg Ala Lys Leu Leu Lys Lys Glu Ile Ala Leu 735 740 745 750	2435
ctc cga aac aag ctg agc cag cag cac agc cag ccc ctg ccc acg ggg Leu Arg Asn Lys Leu Ser Gln Gln His Ser Gln Pro Leu Pro Thr Gly 751 756 761 766	2483
cca ggc ttg gaa ggc ttc gaa gag gac gga gct gcg ctg ggg ccg gag Pro Gly Leu Glu Gly Phe Glu Glu Asp Gly Ala Ala Leu Gly Pro Glu 767 772 777 782	2531
gcg ggc gag gaa gtc ctt ccg agg ttg gag act ctt ctg cag cca agg Ala Gly Glu Glu Val Leu Pro Arg Leu Glu Thr Leu Leu Gln Pro Arg 783 788 793 798	2579
aaa agg tcg cgg agc aca tgc gga gac tcc gag gtg gag gag gag tcc Lys Arg Ser Arg Ser Thr Cys Gly Asp Ser Glu Val Glu Glu Glu Ser 799 804 809 814	2627
cca gga aag cgc ctg gac gca ggt ctc acc aac ggc ttt ggg ggt gcg Pro Gly Lys Arg Leu Asp Ala Gly Leu Thr Asn Gly Phe Gly Gly Ala 815 820 825 830	2675
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His Pro Ser Ser Pro Cys Ser Val Lys His Ser Pro Thr Arg Glu Thr	
15 20 25 30	
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Leu Thr Tyr Ala Gln Ala Gln Arg Met Val Glu Ile Glu Ile Glu Gly	
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cgc ttg cac agg atc agt att ttt gat ccc ctg gag atc ata ttg gaa	371
Arg Leu His Arg Ile Ser Ile Phe Asp Pro Leu Glu Ile Ile Leu Glu	
47 52 57 62	
gat gac ctc act gct caa gag atg agt gag tgc aac agc aac aag gaa	419
Asp Asp Leu Thr Ala Gln Glu Met Ser Glu Cys Asn Ser Asn Lys Glu	
63 68 73 78	
aac agc gag cgg cct cct gtc tgc tta aga act aag cgt cac aaa aac	467
Asn Ser Glu Arg Pro Pro Val Cys Leu Arg Thr Lys Arg His Lys Asn	
79 84 89 94	
aac aga gtc aaa aag aaa aac gag gcc ctc ccc agc gcc cac ggc acg	515
Asn Arg Val Lys Lys Lys Asn Glu Ala Leu Pro Ser Ala His Gly Thr	
95 100 105 110	
ccg gcc tcg gcc agt gcc ctc ccg gag ccc aag gtg cgc atc gtg gag	563
Pro Ala Ser Ala Ser Ala Leu Pro Glu Pro Lys Val Arg Ile Val Glu	
111 116 121 126	
tac agc cct ccg tcc gcc ccc agg agg cct cct gtg tac tac aag ttc	611
Tyr Ser Pro Pro Ser Ala Pro Arg Arg Pro Pro Val Tyr Tyr Lys Phe	
127 132 137 142	
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Ile Glu Lys Ser Ala Glu Glu Leu Asp Asn Glu Val Glu Tyr Asp Met	
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159 164 169 174	
ggc gac tgc gtc ccc gcc gtg tcg cag agc atg ttt gag ttc ctg atg	755
Gly Asp Cys Val Pro Ala Val Ser Gln Ser Met Phe Glu Phe Leu Met	
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Asp Arg Phe Glu Lys Glu Ser His Cys Glu Asn Gln Lys Gln Gly Glu	
191 196 201 206	
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Gln Gln Ser Leu Ile Asp Glu Asp Ala Val Cys Cys Ile Cys Met Asp	
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ggg gag tgt cag aac agc aac gtg atc ctc ttc tgc gac atg tgc aac	899
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223 228 233 238	
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Tyr Trp Leu Leu Lys Arg Leu Ser Arg Asn Gly Ala Pro Leu Leu Arg				
479	484	489	494	
cgg ctg cag tcc agc ctg cag tct cag cga agc tca cag cag aga gaa				1715
Arg Leu Gln Ser Ser Leu Gln Ser Gln Arg Ser Ser Gln Gln Arg Glu				
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aat gat gag gag atg aag gct gcc aaa gag aag ctg aag tac tgg cag				1763
Asn Asp Glu Glu Met Lys Ala Ala Lys Glu Lys Leu Lys Tyr Trp Gln				
511	516	521	526	
cgg ctg cgg cac gac ctg gag cgc gct cgc ctg ctg atc gag ctg ctg				1811
Arg Leu Arg His Asp Leu Glu Arg Ala Arg Leu Leu Ile Glu Leu Leu				
527	532	537	542	
cgc aag cgg gag aag ctc aag cgt gag cag gtg aag gtg gag cag gtc				1859
Arg Lys Arg Glu Lys Leu Lys Arg Glu Gln Val Lys Val Glu Gln Val				
543	548	553	558	
gcc atg gag ctg cgg ctg acc ccg ctg acg gtg ctg ctg cgc tca gtg				1907
Ala Met Glu Leu Arg Leu Thr Pro Leu Thr Val Leu Leu Arg Ser Val				
559	564	569	574	
ctg gac cag ctg caa gac aag gac ccc gcc agg ata ttt gcg cag ccc				1955
Leu Asp Gln Leu Gln Asp Lys Asp Pro Ala Arg Ile Phe Ala Gln Pro				
575	580	585	590	
gtg agt ctg aag gag gta cca gat tat ttg gat cac att aaa cat ccc				2003
Val Ser Leu Lys Glu Val Pro Asp Tyr Leu Asp His Ile Lys His Pro				
591	596	601	606	
atg gac ttt gcc aca atg agg aaa cgg tta gaa gct caa ggg tat aaa				2051
Met Asp Phe Ala Thr Met Arg Lys Arg Leu Glu Ala Gln Gly Tyr Lys				
607	612	617	622	
aac ctc cat gag ttt gag gag gat ttt gat ctc att ata gat aac tgc				2099
Asn Leu His Glu Phe Glu Glu Asp Phe Asp Leu Ile Ile Asp Asn Cys				
623	628	633	638	
atg aag tac aat gcc agg gac acc gtg ttc tat aga gcc gcg gtg agg				2147
Met Lys Tyr Asn Ala Arg Asp Thr Val Phe Tyr Arg Ala Ala Val Arg				
639	644	649	654	
ctg cgc gat cag gga ggt gtt gtt ctg agg cag gcc cgg cgc gag gtg				2195
Leu Arg Asp Gln Gly Gly Val Val Leu Arg Gln Ala Arg Arg Glu Val				
655	660	665	670	
gac agc atc ggc ttg gaa gag gcc tcg ggg atg cac ctg cct gag cgg				2243
Asp Ser Ile Gly Leu Glu Glu Ala Ser Gly Met His Leu Pro Glu Arg				
671	676	681	686	
cct gct gcg gca ccg cgg cgg cct ttc tcc tgg gaa gac gtg gac agg				2291
Pro Ala Ala Ala Pro Arg Arg Pro Phe Ser Trp Glu Asp Val Asp Arg				
687	692	697	702	

ttg ctg gac ccc gcc aac aga gcc cac ctg ggc ctg gag gag cag ctg Leu Leu Asp Pro Ala Asn Arg Ala His Leu Gly Leu Glu Glu Gln Leu 703 708 713 718	2339
aga gag ctg ctg gac atg ctc gac ctc acc tgc gct atg aag tcc agc Arg Glu Leu Leu Asp Met Leu Asp Leu Thr Cys Ala Met Lys Ser Ser 719 724 729 734	2387
ggc tcc cgg agc aag cgg gca aag ctg ctc aaa aag gaa att gcc ctt Gly Ser Arg Ser Lys Arg Ala Lys Leu Leu Lys Lys Glu Ile Ala Leu 735 740 745 750	2435
ctc cga aac aag ctg agc cag cag cac agc cag ccc ctg ccc acg ggg Leu Arg Asn Lys Leu Ser Gln Gln His Ser Gln Pro Leu Pro Thr Gly 751 756 761 766	2483
cca ggc ttg gaa ggc ttc gaa gag gac gga gct gcg ctg ggg ccg gag Pro Gly Leu Glu Gly Phe Glu Glu Asp Gly Ala Ala Leu Gly Pro Glu 767 772 777 782	2531
gcg ggc gag gaa gga gat aaa tct ccc cct aaa ctt gaa cca tca gat Ala Gly Glu Glu Gly Asp Lys Ser Pro Pro Lys Leu Glu Pro Ser Asp 783 788 793 798	2579
gca tta cct ctt cct tca aac tcg gag act aat tca gaa cca cca acc Ala Leu Pro Leu Pro Ser Asn Ser Glu Thr Asn Ser Glu Pro Pro Thr 799 804 809 814	2627
ctc aaa cca gta gaa ctc aac cca gag cag agt aaa ctt ttc aaa aga Leu Lys Pro Val Glu Leu Asn Pro Glu Gln Ser Lys Leu Phe Lys Arg 815 820 825 830	2675
gtc aca ttt gat aat gaa tca cat agc gct tgc act cag agc gca ctg Val Thr Phe Asp Asn Glu Ser His Ser Ala Cys Thr Gln Ser Ala Leu 831 836 841 846	2723
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ccg gcg gcg gcg gcc tcc gcg gtg gcg gag cca gca agc gat gta aac Pro Ala Ala Ala Ala Ser Ala Val Ala Glu Pro Ala Ser Asp Val Asn 863 868 873 878	2819
aga cgc act tct gtt ctc ttc tgc aaa tcg aaa agt gta agc ccc cca Arg Arg Thr Ser Val Leu Phe Cys Lys Ser Lys Ser Val Ser Pro Pro 879 884 889 894	2867
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acc aaa acc ttt ttg tct gta gtc ctt ccg agg ttg gag act ctt ctg Thr Lys Thr Phe Leu Ser Val Val Leu Pro Arg Leu Glu Thr Leu Leu 911 916 921 926	2963

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gcc aca ccc cga cga cgc tgt gcc tcc gag tcc agc atc tcc tcc agc Ala Thr Pro Arg Arg Cys Ala Ser Glu Ser Ser Ile Ser Ser Ser 975 980 985 990	3155
aac agc ccg ctc tgc gac tcg agc ttt aat gcg ccc aaa tgt ggg cgg Asn Ser Pro Leu Cys Asp Ser Ser Phe Asn Ala Pro Lys Cys Gly Arg 991 996 1001 1006	3203
ggc aaa ccg gct ctt gtg cga cgg cac acg ctg gag gac cgc agt gag Gly Lys Pro Ala Leu Val Arg Arg His Thr Leu Glu Asp Arg Ser Glu 1007 1012 1017 1022	3251
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                                         Met Ser Thr Ser
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caa cca ggg gcc tgc cca tgc cag gga gct gca agc cgc ccc gcc att      221
Gln Pro Gly Ala Cys Pro Cys Gln Gly Ala Ala Ser Arg Pro Ala Ile
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ctc tac gca ctt ctg agc tcc agc ctc aag gct gtc ccc cga ccc cgt      269
Leu Tyr Ala Leu Leu Ser Ser Ser Leu Lys Ala Val Pro Arg Pro Arg
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agc cgc tgc cta tgt agg cag cac cgg ccc gtc cag cta tgt gca cct      317
Ser Arg Cys Leu Cys Arg Gln His Arg Pro Val Gln Leu Cys Ala Pro
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cat cgc acc tgc cgg gag gcc ttg gat gtt ctg gcc aag aca gtg gcc      365
His Arg Thr Cys Arg Glu Ala Leu Asp Val Leu Ala Lys Thr Val Ala
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Phe Leu Arg Asn Leu Pro Ser Phe Trp Gln Leu Pro Pro Gln Asp Gln
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cgg cgg ctg ctg cag ggt tgc tgg ggc ccc ctc ttc ctg ctt ggg ttg      461
Arg Arg Leu Leu Gln Gly Cys Trp Gly Pro Leu Phe Leu Leu Gly Leu
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gcc caa gat gct gtg acc ttt gag gtg gct gag gcc ccg gtg ccc agc      509
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ata ctc aag aag att ctg ctg gag gag ccc agc agc agt gga ggc agt      557
Ile Leu Lys Lys Ile Leu Leu Glu Glu Pro Ser Ser Ser Gly Gly Ser
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ggc caa ctg cca gac aga ccc cag ccc tcc ctg gct gcg gtg cag tgg      605
Gly Gln Leu Pro Asp Arg Pro Gln Pro Ser Leu Ala Ala Val Gln Trp
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ctt caa tgc tgt ctg gag tcc ttc tgg agc ctg gag ctt agc ccc aag      653
Leu Gln Cys Cys Leu Glu Ser Phe Trp Ser Leu Glu Leu Ser Pro Lys
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gaa tat gcc tgc ctg aaa ggg acc atc ctc ttc aac ccc gat gtg cca      701
Glu Tyr Ala Cys Leu Lys Gly Thr Ile Leu Phe Asn Pro Asp Val Pro
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Trp Val Leu Cys Glu Val Leu Glu Pro Trp Cys Pro Ala Ala Gln Gly				
197	202	207	212	
cgc ctg acc cgt gtc ctc ctc acg gcc tcc acc ctc aag tcc att ccg				845
Arg Leu Thr Arg Val Leu Leu Thr Ala Ser Thr Leu Lys Ser Ile Pro				
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acc agc ctg ctt ggg gac ctc ttc ttt cgc cct atc att gga gat gtt				893
Thr Ser Leu Leu Gly Asp Leu Phe Phe Arg Pro Ile Ile Gly Asp Val				
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gac atc gct ggc ctt ctt ggg gac atg ctt ttg ctc agg tga cctgttc				942
Asp Ile Ala Gly Leu Leu Gly Asp Met Leu Leu Leu Arg *				
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ggaacagctc ttcactcagc cacaccccac attggacttc cttgggtttgg acacagtgtct				1122
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gaaaagaaaa atgaagcttt gatggaatgt aaagccaagc ctgttggttag tccaattgtt	180
taagttttca gataaagaag aacatgaaca aatgattcc atttcaggta aaacgggtga	240
gactggtgtt gaagaa atg ata gca aca aga aaa gtt gaa caa gat tca	289
Met Ile Ala Thr Arg Lys Val Glu Gln Asp Ser	

aag gag aca gta aaa tta tcc cat gaa gat gac cat att ctt gag gac Lys Glu Thr Val Lys Leu Ser His Glu Asp Asp His Ile Leu Glu Asp 12 17 22 27	337
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aag aca gaa aac agc ctt gta ggt ttg cct agt tgt gta gat gaa gtg Lys Thr Glu Asn Ser Leu Val Gly Leu Pro Ser Cys Val Asp Glu Val 44 49 54 59	433
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236					241					246				251		
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Ser	Gly	Val	Lys	Ser	Val	Lys	Asn	Gln	Ala	His	Ser	Val	Leu	Lys	Lys	
252					257					262				267		
aca	tta	cag	gat	caa	act	tta	gta	caa	att	ttc	aag	ccc	tta	act	cat	1105
Thr	Leu	Gln	Asp	Gln	Thr	Leu	Val	Gln	Ile	Phe	Lys	Pro	Leu	Thr	His	
268					273					278				283		
tct	ttg	agt	gat	aag	tca	cac	gct	cat	cct	ggg	tgcc	ttg	aaa	gaa	cct	1153
Ser	Leu	Ser	Asp	Lys	Ser	His	Ala	His	Pro	Gly	Cys	Leu	Lys	Glu	Pro	
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His	His	Pro	Ala	Gln	Thr	Gly	His	Val	Ser	His	Ser	Ser	Gln	Lys	Gln	
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tgt	cat	aag	cct	cag	caa	cag	gcc	cca	gca	atg	aaa	acc	aat	agt	cac	1249
Cys	His	Lys	Pro	Gln	Gln	Gln	Ala	Pro	Ala	Met	Lys	Thr	Asn	Ser	His	
316					321					326				331		
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Val	Lys	Glu	Glu	Leu	Glu	His	Pro	Gly	Val	Glu	His	Phe	Lys	Glu	Glu	
332					337					342				347		
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Asp	Lys	Leu	Lys	Leu	Lys	Lys	Pro	Glu	Lys	Asn	Leu	Gln	Pro	Arg	Gln	
348					353					358				363		
aga	aga	agc	agc	aaa	agt	ttt	tct	tta	gat	gag	cca	cca	ttg	ttc	att	1393
Arg	Arg	Ser	Ser	Lys	Ser	Phe	Ser	Leu	Asp	Glu	Pro	Pro	Leu	Phe	Ile	
364					369					374				379		
cca	gat	aac	ata	gct	acc	ata	aga	aga	gaa	ggc	tct	gat	cat	agc	tcc	1441
Pro	Asp	Asn	Ile	Ala	Thr	Ile	Arg	Arg	Glu	Gly	Ser	Asp	His	Ser	Ser	
380					385					390				395		
tca	ttt	gaa	agc	aaa	tat	atg	tgg	act	ccc	agc	aag	cag	tgt	ggg	ttt	1489
Ser	Phe	Glu	Ser	Lys	Tyr	Met	Trp	Thr	Pro	Ser	Lys	Gln	Cys	Gly	Phe	
396					401					406				411		
tgcc	aaa	aaa	cca	cat	ggc	aac	agg	ttt	atg	gtt	ggc	tgt	ggg	aga	tgt	1537
Cys	Lys	Lys	Pro	His	Gly	Asn	Arg	Phe	Met	Val	Gly	Cys	Gly	Arg	Cys	
412					417					422				427		
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Asp	Asp	Trp	Phe	His	Gly	Asp	Cys	Val	Gly	Leu	Ser	Leu	Ser	Gln	Ala	
428					433					438				443		
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Ala Glu Glu Asp Lys Lys Thr Glu Ile Leu Asp Pro Asp Thr Leu Glu	
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Asn Gln Ala Thr Val Glu Phe His Ser Gly Asp Lys Thr Met Glu Cys	
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Glu Lys Leu Gly Leu Ser Lys His Thr Thr Asn Asp Arg Thr Lys Tyr	
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Ile Asp Asp Thr Val Lys His Lys Val Lys Ile Leu Lys Arg Glu Ser	
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Val Thr Cys Thr Gly Glu Lys Ala Ser Lys Pro Gly Thr His Glu Lys	
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Gln Glu Met Lys Lys Lys Lys Val Glu Lys Gly Val Leu Asn Val His	
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Pro Ala Ala Ser Ala Ser Lys Pro Ser Ala Asp Gln Ile Arg Gln Ser	
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Val Arg His Ser Leu Lys Asp Ile Leu Met Lys Arg Leu Thr Asp Ser	
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Asn Leu Lys Val Pro Glu Glu Lys Ala Ala Lys Val Ala Thr Lys Ile	
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Asn Lys Tyr Arg Ser Leu Met Phe Asn Leu Lys Asp Pro Lys Asn Asn	
668 673 / 678 683	
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Pro Gln Thr Val Trp Asp Tyr Val Glu Lys Ile Lys Ala Ser Gly Thr				
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Lys Glu Ile Cys Val Val Arg Phe Thr Pro Val Thr Glu Glu Asp Gln				
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Pro Leu Gly Ala Thr Asp Lys Ile Pro His Pro Leu Val Pro Phe Asp				
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Gly Pro Gly Leu Glu Leu His Arg Pro Asn Leu Leu Gly Leu Ile				
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His Ile Ala Glu Thr Pro Glu Ser Ala Pro Pro Ile Ala Leu Pro Pro				
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Pro Leu Met Glu Val Thr Lys Gln Glu Pro Pro Lys Pro Leu Arg Phe				
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Leu Pro Gly Val Leu Ile Gly Trp Glu Asn Gln Pro Thr Thr Leu Glu				
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Gln Pro Arg Leu Gly Glu Glu Ser Ile Arg Gly His Thr Leu Ile Lys	
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aat taa acaatgaaag aaagtgtatc tgtgtaatca agatgaaaat cacaagcatg	3139
Asn *	
847	
cccaagacta tgtcctgaca tataactatg aaggaagagg atcgggtggct gggctctgtag	3199
gttgttgacag tgaacgacaa gaagaagatg ggcttgaatt tttggataat ttggagccca	3259
aatttaggac actagcagaa gcatgcatga agagatgagt gtgttctaata aagtctctga	3319
aagccagtgg ctttatgact tttaaaaaaa attacaaacc aagaattttt taaagcagaa	3379
gatgctatatt gtggggggttt ttctctcatt atttggtatg aatctctttg gtcaaataca	3439
catttacaga gagacactat aaacaagtac acaattttt caattttttac atatttttaa	3499
attacttata ttctatccaa ggaggtctac agagaaatta aagtctgcct tatttgttac	3559
atttggttat aatgacaaca gccaatatat agtgcaataa aatgtaatta attcaagtcc	3619
ttattataga ctatttgaag cacaacctaa tggaaaattg tagagacctt gctttaacat	3679
tatctccagt taattaagtg ttcattgtgg gcttggaac tgttgttttc ctgaacatct	3739
aaagtgtgta gactgcattc ttgctattat tttattgttg taatgtgacc ttttactgt	3799
gcaaagggag atttctagcc aggcattgac tattacaatt tcattttggg ggagtttagt	3859
tttaggtttt attgtatata agatcctgca ctgaatctgt gtctcctctg ttacctactt	3919
ttgccagtga aatttaagt ttaaaataact ttcagaatgt atttttacta ctgcaagttt	3979
ttggtcttta aaatgtcaag tagcatctct ctctttctct ctgtctcttt ctgtttctct	4039

ctccagtttt tttttttttt aatttccata tgggctaaga atcagaatat ttgaaatctg 4099
tctggctttc tccctcataa gtgagg 4125

<210> 271
<211> 1865
<212> DNA
<213> Homo sapiens

<220>
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<222> (107)..(1558)

<400> 271
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tctacgattc atagatctgg aattcgcggc cgcgtcgacc cgcacc atg ggg tcc 115
Met Gly Ser
1
cgc cac ttc gag ggg att tat gac cac gtg ggg cac ttc ggc aga ttc 163
Arg His Phe Glu Gly Ile Tyr Asp His Val Gly His Phe Gly Arg Phe
4 9 14 19
cag aga gtc ctc tat ttc ata tgt gcc ttc cag aac atc tct tgt ggt 211
Gln Arg Val Leu Tyr Phe Ile Cys Ala Phe Gln Asn Ile Ser Cys Gly
20 25 30 35
att cac tac ttg gct tct gtg ttc atg gga gtc acc cct cat cat gtc 259
Ile His Tyr Leu Ala Ser Val Phe Met Gly Val Thr Pro His His Val
36 41 46 51
tgc agg ccc cca ggc aat tgt cat ctg gac tca ttg tgg gac ttg ggg 307
Cys Arg Pro Pro Gly Asn Cys His Leu Asp Ser Leu Trp Asp Leu Gly
52 57 62 67
att aga gga cct gag aca aag atg ctg ctg ccc tac tgc ttg cta acg 355
Ile Arg Gly Pro Glu Thr Lys Met Leu Leu Pro Tyr Cys Leu Leu Thr
68 73 78 83
aag cta gga cgc cgg gtg gtc ttg tgg gcc aca agc agt agc atg ttt 403
Lys Leu Gly Arg Arg Val Val Leu Trp Ala Thr Ser Ser Ser Met Phe
84 89 94 99
ttg ttt gga ata gca gcg gcg ttt gca gtt gat tat tac acc ttc atg 451
Leu Phe Gly Ile Ala Ala Phe Ala Val Asp Tyr Tyr Thr Phe Met
100 105 110 115
gct gct cgc ttt ttt ctt gcc atg gtt gca agt ggc tat ctt gtg gtg 499
Ala Ala Arg Phe Phe Leu Ala Met Val Ala Ser Gly Tyr Leu Val Val
116 121 126 131
ggg ttt gtc tat gtg atg gaa ttc att ggc atg aag tct cgg aca tgg 547

Gly	Phe	Val	Tyr	Val	Met	Glu	Phe	Ile	Gly	Met	Lys	Ser	Arg	Thr	Trp	
132					137					142					147	
gcg	tct	gtc	cat	ttg	cat	tcc	ttt	ttt	gca	ggt	gga	acc	ctg	ctg	gtg	595
Ala	Ser	Val	His	Leu	His	Ser	Phe	Phe	Ala	Val	Gly	Thr	Leu	Leu	Val	
148					153					158					163	
gct	ttg	aca	gga	tac	ttg	gtc	agg	acc	tgg	tgg	ctt	tac	cag	atg	atc	643
Ala	Leu	Thr	Gly	Tyr	Leu	Val	Arg	Thr	Trp	Trp	Leu	Tyr	Gln	Met	Ile	
164					169					174					179	
ctc	tcc	aca	gtg	act	gtc	ccc	ttt	atc	ctg	tgc	tgt	tgg	gtg	ctc	cca	691
Leu	Ser	Thr	Val	Thr	Val	Pro	Phe	Ile	Leu	Cys	Cys	Trp	Val	Leu	Pro	
180					185					190					195	
gag	aca	cct	ttt	tgg	ctt	ctc	tca	gag	gga	cga	tat	gaa	gaa	gca	caa	739
Glu	Thr	Pro	Phe	Trp	Leu	Leu	Ser	Glu	Gly	Arg	Tyr	Glu	Glu	Ala	Gln	
196					201					206					211	
aaa	ata	gtt	gac	atc	atg	gcc	aag	tgg	aac	agg	gca	agc	tcc	tgt	aaa	787
Lys	Ile	Val	Asp	Ile	Met	Ala	Lys	Trp	Asn	Arg	Ala	Ser	Ser	Cys	Lys	
212					217					222					227	
ctg	tca	gaa	ctt	tta	tca	ctg	gac	cta	caa	ggt	cct	gtt	agt	aat	agc	835
Leu	Ser	Glu	Leu	Leu	Ser	Leu	Asp	Leu	Gln	Gly	Pro	Val	Ser	Asn	Ser	
228					233					238					243	
ccc	act	gaa	gtt	cag	aag	cac	aac	cta	tca	tat	ctg	ttt	tat	aac	tgg	883
Pro	Thr	Glu	Val	Gln	Lys	His	Asn	Leu	Ser	Tyr	Leu	Phe	Tyr	Asn	Trp	
244					249					254					259	
agc	att	acg	aaa	agg	aca	ctt	acc	gtt	tgg	cta	atc	tgg	ttc	act	gga	931
Ser	Ile	Thr	Lys	Arg	Thr	Leu	Thr	Val	Trp	Leu	Ile	Trp	Phe	Thr	Gly	
260					265					270					275	
agt	ttg	gga	ttc	tac	tcg	ttt	tcc	ttg	aat	tct	gtt	aac	tta	gga	ggc	979
Ser	Leu	Gly	Phe	Tyr	Ser	Phe	Ser	Leu	Asn	Ser	Val	Asn	Leu	Gly	Gly	
276					281					286					291	
aat	gaa	tac	tta	aac	ctc	ttc	ctc	ctg	ggt	gta	gtg	gaa	att	ccc	gcc	1027
Asn	Glu	Tyr	Leu	Asn	Leu	Phe	Leu	Leu	Gly	Val	Val	Glu	Ile	Pro	Ala	
292					297					302					307	
tac	acc	ttc	gtg	tgc	atc	gcc	atg	gac	aag	gtc	ggg	agg	aga	aca	gtc	1075
Tyr	Thr	Phe	Val	Cys	Ile	Ala	Met	Asp	Lys	Val	Gly	Arg	Arg	Thr	Val	
308					313					318					323	
ctg	gcc	tac	tct	ctt	ttc	tgc	agt	gca	ctg	gcc	tgt	ggt	gtc	gtt	atg	1123
Leu	Ala	Tyr	Ser	Leu	Phe	Cys	Ser	Ala	Leu	Ala	Cys	Gly	Val	Val	Met	
324					329					334					339	
gtg	atc	ccc	cag	aaa	cat	tat	att									

356	361	366	371	
gct gag ctg tat cca acc att gta aga tcg ctg gct gtg gga agc ggc				1267
Ala Glu Leu Tyr Pro Thr Ile Val Arg Ser Leu Ala Val Gly Ser Gly				
372	377	382	387	
agc atg gtg tgt cgc ctg gcc agc atc ctg gcg ccg ttc tct gtg gac				1315
Ser Met Val Cys Arg Leu Ala Ser Ile Leu Ala Pro Phe Ser Val Asp				
388	393	398	403	
ctc agc agc att tgg atc ttc ata cca cag ttg ttt gtt ggg act atg				1363
Leu Ser Ser Ile Trp Ile Phe Ile Pro Gln Leu Phe Val Gly Thr Met				
404	409	414	419	
gcc ctc ctg agt gga gtg tta aca cta aag ctt cca gaa acc ctt ggg				1411
Ala Leu Leu Ser Gly Val Leu Thr Leu Lys Leu Pro Glu Thr Leu Gly				
420	425	430	435	
aaa cgg cta gca act act tgg gag gag gct gca aaa ctg gag tca gag				1459
Lys Arg Leu Ala Thr Thr Trp Glu Glu Ala Ala Lys Leu Glu Ser Glu				
436	441	446	451	
aat gaa agc aag tca agc aaa tta ctt ctc aca act aat aat agt ggg				1507
Asn Glu Ser Lys Ser Ser Lys Leu Leu Leu Thr Thr Asn Asn Ser Gly				
452	457	462	467	
ctg gaa aaa acg gaa gcg att acc ccc agg gat tct ggt ctt ggt gaa				1555
Leu Glu Lys Thr Glu Ala Ile Thr Pro Arg Asp Ser Gly Leu Gly Glu				
468	473	478	483	
taa atgt gccatgacctg ctgtctagca cctgaaatat tatttaccct aatgcctttg				1612
*				
484				
tattagagga atcttattct catctcccat atgttggttg tatgtctttt taataaattt				1672
tgtaagaaaa ttttaaagca aatatgttat aaaagaaata aaaactaaga tgaaaattct				1732
cagttttaaa aactgctttc ttattgctgc aaaatatttt tcaacatttg tttttctatg				1792
tagttgattc tcaacctttc cccaccaccc cctaccatg ctctgcccga attcttgccc				1852
tcgagggcca aat				1865

<210> 272
 <211> 2495
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (411) .. (812)

<400> 272

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cccaagatgg	cgaccgagtt	ggagtacgag	tctgtgctgt	gtgtgaagcc	agacgtcagc	120
gtctaccgga	ttccgccccg	ggcctccaac	cgcggttaca	gggcctctga	ctggaaatta	180
gaccagcctg	attggactgg	tgcctccga	atcacttcaa	aagggaagac	tgcctatata	240
aaactcgagg	ataaagtttc	aggggagctc	tttgctcagg	caccagtaga	acaatatcct	300
ggtattgctg	tggagacggt	gacagattct	agccgctact	ttgtaatccg	gatccaggat	360
ggtactggtg	ggtaaagcag	gaatctgaga	tttccaagga	atctcaagaa	atg gat	416
					Met Asp	
					1	
gct cgt cct aag ttg gat ctg ggc ttc aag gaa gga caa acc atc aag	464					
Ala Arg Pro Lys Leu Asp Leu Gly Phe Lys Glu Gly Gln Thr Ile Lys						
3 8 13 18						
ttg tgt atc ggg aac att aca aac aag aaa gga ggt gct tct aag ccc	512					
Leu Cys Ile Gly Asn Ile Thr Asn Lys Lys Gly Gly Ala Ser Lys Pro						
19 24 29 34						
agg act gca agg ggt ggg ggt ctg agc tta ctc cca ccc ccg cca gga	560					
Arg Thr Ala Arg Gly Gly Gly Leu Ser Leu Leu Pro Pro Pro Pro Gly						
35 40 45 50						
ggc aaa gtc act att ccc cca cca tcc tcc tca gtt gcc atc agc aat	608					
Gly Lys Val Thr Ile Pro Pro Pro Ser Ser Ser Val Ala Ile Ser Asn						
51 56 61 66						
cat gtc acc cca cca ccc att ccg aaa tct aac cat gga ggc agt gat	656					
His Val Thr Pro Pro Pro Ile Pro Lys Ser Asn His Gly Gly Ser Asp						
67 72 77 82						
gca gat atc ctt tta gat ttg gat tct cct gct cct gtc acg aca cca	704					
Ala Asp Ile Leu Leu Asp Leu Asp Ser Pro Ala Pro Val Thr Thr Pro						
83 88 93 98						
gca cca act cca gtt tct gta agc aat gac ttg tgg gga gac ttc agc	752					
Ala Pro Thr Pro Val Ser Val Ser Asn Asp Leu Trp Gly Asp Phe Ser						
99 104 109 114						
act gcc tcc agc tct gtt cca aac cag gca cca cag cca tcc aac tgg	800					
Thr Ala Ser Ser Ser Val Pro Asn Gln Ala Pro Gln Pro Ser Asn Trp						
115 120 125 130						
gtc cag ttc tga atg gcattggcag gacattaagg acagacttga ggaataaaaa	855					
Val Gln Phe *						
131						
tgaccttgag ggcaccaatc tgtgagggaa gttaggaacc catttcctcc ccagaaccag	915					
aatgactgga caatcttttt catagcttct ccatcacatt caagctgggt tatgtcactc	975					
ccctgtgttg ttacttgtac aqccaagaaa gtatctgtta tctcctgcgt agtaccaagg	1035					

<213> Homo sapiens

<220>

<221> CDS

<222> (62) .. (2128)

<400> 273

cgggcgcgcg tcccgtccag gtccggagta accgccgccg ccgccgccaa agctcgccaa 60

c atg gcg gac ctg gag gct gtg ctg gcc gat gtc agt tac ctg atg 106
Met Ala Asp Leu Glu Ala Val Leu Ala Asp Val Ser Tyr Leu Met
1 5 10

gcc atg gag aag agc aag gcg acc ccg gcc gcc cgc gcc agc aag agg 154
Ala Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Arg
16 21 26 31

atc gtc ctg ccg gag ccc agt atc cgg agt gtg atg cag aag tac ctt 202
Ile Val Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Lys Tyr Leu
32 37 42 47

gca gag aga aat gaa ata acc ttt gac aag att ttc aat cag aaa att 250
Ala Glu Arg Asn Glu Ile Thr Phe Asp Lys Ile Phe Asn Gln Lys Ile
48 53 58 63

ggg ttc ttg cta ttt aaa gat ttt tgt ttg aat gaa att aat gaa gct 298
Gly Phe Leu Leu Phe Lys Asp Phe Cys Leu Asn Glu Ile Asn Glu Ala
64 69 74 79

gta cct cag gtg aag ttt tat gaa gag ata aag gaa tat gaa aaa ctt 346
Val Pro Gln Val Lys Phe Tyr Glu Glu Ile Lys Glu Tyr Glu Lys Leu
80 85 90 95

gat aat gag gaa gac cgc ctt tgc aga agt cga caa att tat gat gcc 394
Asp Asn Glu Glu Asp Arg Leu Cys Arg Ser Arg Gln Ile Tyr Asp Ala
96 101 106 111

tac atc atg aag gaa ctt ctt tcc tgt tca cat cct ttc tca aag caa 442
Tyr Ile Met Lys Glu Leu Leu Ser Cys Ser His Pro Phe Ser Lys Gln
112 117 122 127

gct gta gaa cac gta caa agt cat tta tcc aag aaa caa gtg aca tca 490
Ala Val Glu His Val Gln Ser His Leu Ser Lys Lys Gln Val Thr Ser
128 133 138 143

act ctt ttt cag cca tac ata gaa gaa att tgt gaa agc ctt cga ggt 538
Thr Leu Phe Gln Pro Tyr Ile Glu Glu Ile Cys Glu Ser Leu Arg Gly
144 149 154 159

gac att ttt caa aaa ttt atg gaa agt gac aag ttc act aga ttt tgt 586
Asp Ile Phe Gln Lys Phe Met Glu Ser Asp Lys Phe Thr Arg Phe Cys
160 165 170 175

cag tgg aaa aac gtt gaa tta aat atc cat ttg acc atg aat gag ttc 634
Gln Trp Lys Asn Val Glu Leu Asn Ile His Leu Thr Met Asn Glu Phe
176 181 186 191

agt gtg cat agg att att gga cga gga gga ttc ggg gaa gtt tat ggt	682
Ser Val His Arg Ile Ile Gly Arg Gly Gly Phe Gly Glu Val Tyr Gly	
192 197 202 207	
tgc agg aaa gca gac act gga aaa atg tat gca atg aaa tgc tta gat	730
Cys Arg Lys Ala Asp Thr Gly Lys Met Tyr Ala Met Lys Cys Leu Asp	
208 213 218 223	
aag aag agg atc aaa atg aaa caa gga gaa aca tta gcc tta aat gaa	778
Lys Lys Arg Ile Lys Met Lys Gln Gly Glu Thr Leu Ala Leu Asn Glu	
224 229 234 239	
aga atc atg ttg tct ctt gtc agc aca gga gac tgt cct ttc att gta	826
Arg Ile Met Leu Ser Leu Val Ser Thr Gly Asp Cys Pro Phe Ile Val	
240 245 250 255	
tgt atg acc tat gcc ttc cat acc cca gat aaa ctc tgc ttc atc ctg	874
Cys Met Thr Tyr Ala Phe His Thr Pro Asp Lys Leu Cys Phe Ile Leu	
256 261 266 271	
gat ctg atg aac ggg ggc gat ttg cac tac cac ctt tca caa cac ggt	922
Asp Leu Met Asn Gly Gly Asp Leu His Tyr His Leu Ser Gln His Gly	
272 277 282 287	
gtg ttc tct gag aag gag atg cgg ttt tat gcc act gaa atc att ctg	970
Val Phe Ser Glu Lys Glu Met Arg Phe Tyr Ala Thr Glu Ile Ile Leu	
288 293 298 303	
ggg ctg gaa cac atg cac aat cgg ttt gtt gtc tac aga gat ttg aag	1018
Gly Leu Glu His Met His Asn Arg Phe Val Val Tyr Arg Asp Leu Lys	
304 309 314 319	
cca gca aat att ctc ttg gat gaa cat gga cac gca aga ata tca gat	1066
Pro Ala Asn Ile Leu Leu Asp Glu His Gly His Ala Arg Ile Ser Asp	
320 325 330 335	
ctt ggt ctt gcc tgc gat ttt tcc aaa aag aag cct cat gcg agt gtg	1114
Leu Gly Leu Ala Cys Asp Phe Ser Lys Lys Lys Pro His Ala Ser Val	
336 341 346 351	
ggc acc cat ggg tac atg gct ccc gag gtg ctg cag aag ggg acg gcc	1162
Gly Thr His Gly Tyr Met Ala Pro Glu Val Leu Gln Lys Gly Thr Ala	
352 357 362 367	
tat gac agc agt gcc gac tgg ttc tcc ctg ggc tgc atg ctt ttc aaa	1210
Tyr Asp Ser Ser Ala Asp Trp Phe Ser Leu Gly Cys Met Leu Phe Lys	
368 373 378 383	
ctt ctg aga ggg cac agc cct ttc aga caa cat aaa acc aaa gac aag	1258
Leu Leu Arg Gly His Ser Pro Phe Arg Gln His Lys Thr Lys Asp Lys	
384 389 394 399	
cat gaa att/gac cga atg aca ctc acc gtg aat gtg gaa ctt cca gac	1306
His Glu Ile Asp Arg Met Thr Leu Thr Val Asn Val Glu Leu Pro Asp	
400 405 410 415	
acc ttc tct cct gaa ctg aag tcc ctt ttg gag ggc ttg ctt cag cga	1354

640	645	650	655	
cgg cta ttg cgt cgt gcc ccg aag ttc ctc aac aaa cct cgg tca ggt				2074
Arg Leu Leu Arg Arg Ala Pro Lys Phe Leu Asn Lys Pro Arg Ser Gly				
656	661	666	671	
act gtg gag ctc cca aag cca tcc ctc tgt cac aga aac agc aac ggc				2122
Thr Val Glu Leu Pro Lys Pro Ser Leu Cys His Arg Asn Ser Asn Gly				
672	677	682	687	
ctc tag caccagaaa cagggagggt cctcgaggag gacacaccag ggtctcagcc				2178
Leu *				
688				
ttttgggggtg aacgaggatg aggcattctga tctattcgct accgggactc ctccaggctc				2238
ccgagaggag tcgggaccct tcggcttggg gtcagctcag ctccctgcct tgtcacattt				2298
gtctgcatta gaaactactg aagaaataaa agttcttttt ctttgcata aaaaaaaaaa				2358
aaaa				2362

<210> 274
 <211> 1829
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (146)..(1390)

<400> 274	
attacgccaa gcttggcacg aggcgtttgt cccttgccgt acccgactta ataccaatgt	60
agccccgggaa ccgagttgcg ggagtgcggt ctgtgccgtt ccggccagga gtttgccgac	120
tgcagacgtc ctgcgaaccg gcaag atg tgc tct ctg ggg ttg ttc cct cct	172
Met Cys Ser Leu Gly Leu Phe Pro Pro	
1 5	
cca ccg cct cgg ggt caa gtc acc cta tat gag cac aat aac gag ctg	220
Pro Pro Pro Arg Gly Gln Val Thr Leu Tyr Glu His Asn Asn Glu Leu	
10 15 20 25	
gtg acg ggc agt agc tat gag agc ccg ccc ccc gac ttc cgg ggc cag	268
Val Thr Gly Ser Ser Tyr Glu Ser Pro Pro Pro Asp Phe Arg Gly Gln	
26 31 36 41	
tgg atc aat ctt cct gtc cta caa ctg aca aag gat ccc cta aag acc	316
Trp Ile Asn Leu Pro Val Leu Gln Leu Thr Lys Asp Pro Leu Lys/Thr	
42 47 52 57	
cct gga agg ctg gac cat ggc aca aga act gcc ttc atc cat cac cgg	364
Pro Gly Arg Leu Asp His Gly Thr Arg Thr Ala Phe Ile His His Arg	

gac ggc agc aaa atc ctg gct acc act cct tca gct gtc ttt cga gtc	1084
Asp Gly Ser Lys Ile Leu Ala Thr Thr Pro Ser Ala Val Phe Arg Val	
298 303 308 313	
tgg gag gcc cag atg tgg act tgt gag agg tgg cct act cta tca ggg	1132
Trp Glu Ala Gln Met Trp Thr Cys Glu Arg Trp Pro Thr Leu Ser Gly	
314 319 324 329	
cgc tgt cag act ggc tgc tgg agc cca gat ggc agc cga ctg ctg ttc	1180
Arg Cys Gln Thr Gly Cys Trp Ser Pro Asp Gly Ser Arg Leu Leu Phe	
330 335 340 345	
act gta ttg gga gag cca ctg att tac tcc ctg tct ttt cca gaa cgt	1228
Thr Val Leu Gly Glu Pro Leu Ile Tyr Ser Leu Ser Phe Pro Glu Arg	
346 351 356 361	
tgt ggt gag gga aag ggt gcg ttg gag gtg caa agt cag caa cga ttg	1276
Cys Gly Glu Gly Lys Gly Ala Leu Glu Val Gln Ser Gln Gln Arg Leu	
362 367 372 377	
tgg cag atc tgt ctg aga caa caa tac aga cac cag atg gtg agg aga	1324
Trp Gln Ile Cys Leu Arg Gln Gln Tyr Arg His Gln Met Val Arg Arg	
378 383 388 393	
ggc ttg ggg gag agg ctc act cca tgg tct ggg acc cca gtg ggg aac	1372
Gly Leu Gly Glu Arg Leu Thr Pro Trp Ser Gly Thr Pro Val Gly Asn	
394 399 404 409	
gtc tgg ctg tgc tta tga aaggaa agccaagggt acaggatggt aaaccagtca	1426
Val Trp Leu Cys Leu *	
410 415	
tcctcctttt tcgcactcga aacagccctg tgtttgagct ccttcctgt ggcattatcc	1486
agggggagcc aggagcccag cccagctca tcactttcca tccttccttc aacaaagggg	1546
ccctgctcag tgtgggctgg tccacaggcc gaattgccca catcccgtg tactttgtca	1606
atgccagtt tccacgtttt agcccagtgc ttgggcgggc ccaggaaccc cctgctgggg	1666
gtggaggctc tattcatgac ctgcccctct ttactgagac atccccaacc tctgcccctt	1726
gggaccctct ccagggcca ccactgttc tgcccactc cccacattcc cacctctaag	1786
aataaataag ttttcctttt gttttccact caaaaaaaaaaaa aaa	1829

<210> 275
 <211> 1708
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (36) .. (1571)

<400> 275

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aag gct gct gcg ctg aac ctc tcg gct ctc cac agc ccc gcg cac agg		101
Lys Ala Ala Ala Leu Asn Leu Ser Ala Leu His Ser Pro Ala His Arg		
7 12 17 22		
oct ccg ggt ttc agt gta gct cag aag cca ttt gga gcc acg tat gta		149
Pro Pro Gly Phe Ser Val Ala Gln Lys Pro Phe Gly Ala Thr Tyr Val		
23 28 33 38		
tgg agc agc atc ata aac act ctt caa aca caa gtg gaa gtg aaa aaa		197
Trp Ser Ser Ile Ile Asn Thr Leu Gln Thr Gln Val Glu Val Lys Lys		
39 44 49 54		
cga agg cac cgt tta aaa cga cat aat gac tgc ttt gtt ggt tca gaa		245
Arg Arg His Arg Leu Lys Arg His Asn Asp Cys Phe Val Gly Ser Glu		
55 60 65 70		
gct gtg gat gtc att ttt tct cac cta att cag aat aag tat ttt ggt		293
Ala Val Asp Val Ile Phe Ser His Leu Ile Gln Asn Lys Tyr Phe Gly		
71 76 81 86		
gat gta gat att cct cga gcc aaa gtg gtg aga gtg tgt caa gcg ctt		341
Asp Val Asp Ile Pro Arg Ala Lys Val Val Arg Val Cys Gln Ala Leu		
87 92 97 102		
atg gac tac aaa gta ttt gaa gca gtt cca acc aaa gtc ttt gga aaa		389
Met Asp Tyr Lys Val Phe Glu Ala Val Pro Thr Lys Val Phe Gly Lys		
103 108 113 118		
gac aaa aaa cct aca ttt gaa gat agt agt tgc agc ctt tat aga ttc		437
Asp Lys Lys Pro Thr Phe Glu Asp Ser Ser Cys Ser Leu Tyr Arg Phe		
119 124 129 134		
acc aca ata cct aac caa gac agt cag tta ggc aaa gag aac aaa cta		485
Thr Thr Ile Pro Asn Gln Asp Ser Gln Leu Gly Lys Glu Asn Lys Leu		
135 140 145 150		
tat tca cct gcc agg tat gca gat gca tta ttt aag tca tcc gat atc		533
Tyr Ser Pro Ala Arg Tyr Ala Asp Ala Leu Phe Lys Ser Ser Asp Ile		
151 156 161 166		
aga tca gcc agt tta gag gac ctg tgg gaa aat ctg agt tta aag cct		581
Arg Ser Ala Ser Leu Glu Asp Leu Trp Glu Asn Leu Ser Leu Lys Pro		
167 172 177 182		
gcc aac tcc cct cat gta aat atc tct aca acc ttg tct cca caa gtt		629
Ala Asn Ser Pro His Val Asn Ile Ser Thr Thr Leu Ser Pro Gln Val		
183 188 193 198		
att aat gaa gtg tgg caa gaa gaa aca att ggg cgt cta cta caa ctt		677
Ile Asn Glu Val Trp Gln Glu Glu Thr Ile Gly Arg Leu Leu Gln Leu		

199	204	209	214	
gta gac ctt cca ctt ctt gac tcc tta ctg aaa cag caa gag gct gta				725
Val Asp Leu Pro Leu Leu Asp Ser Leu Leu Lys Gln Gln Glu Ala Val				
215	220	225	230	
cct aaa att cct caa cct aag agg cag tcc acc atg gtc aac agc agt				773
Pro Lys Ile Pro Gln Pro Lys Arg Gln Ser Thr Met Val Asn Ser Ser				
231	236	241	246	
aac tat ctg gat cga ggg att ctc aag gct tat agt gac tct cag gaa				821
Asn Tyr Leu Asp Arg Gly Ile Leu Lys Ala Tyr Ser Asp Ser Gln Glu				
247	252	257	262	
gat gag tgg ctc tcg gca gca att gac tgt tta gaa tac ctt cca gac				869
Asp Glu Trp Leu Ser Ala Ala Ile Asp Cys Leu Glu Tyr Leu Pro Asp				
263	268	273	278	
caa atg gtg gtg gaa ata agc aga agc ttt cct gag caa cca gac cga				917
Gln Met Val Val Glu Ile Ser Arg Ser Phe Pro Glu Gln Pro Asp Arg				
279	284	289	294	
aca gac tta gtg aaa gaa ctt ctg ttt gat gcc att ggc aga tat tac				965
Thr Asp Leu Val Lys Glu Leu Leu Phe Asp Ala Ile Gly Arg Tyr Tyr				
295	300	305	310	
agt agt agg gaa cct ctg tta aat cac tta tct gac gtt cat aat gga				1013
Ser Ser Arg Glu Pro Leu Leu Asn His Leu Ser Asp Val His Asn Gly				
311	316	321	326	
att gca gaa ctc tta gtg aat ggg aag acg gaa ata gct tta gaa gct				1061
Ile Ala Glu Leu Leu Val Asn Gly Lys Thr Glu Ile Ala Leu Glu Ala				
327	332	337	342	
acc cag ctc ctt cta aag ctt tta gat ttc caa aat aga gaa gaa ttt				1109
Thr Gln Leu Leu Leu Lys Leu Leu Asp Phe Gln Asn Arg Glu Glu Phe				
343	348	353	358	
aga aga cta ctg tat ttc atg gct gtt gca gca aat cct tct gag ttt				1157
Arg Arg Leu Leu Tyr Phe Met Ala Val Ala Ala Asn Pro Ser Glu Phe				
359	364	369	374	
aaa tta cag aaa gaa agt gac aac cga atg gtt gtg aaa agg ata ttc				1205
Lys Leu Gln Lys Glu Ser Asp Asn Arg Met Val Val Lys Arg Ile Phe				
375	380	385	390	
tca aaa gct att gtt gac aat aaa aat tta tcc aaa ggc aaa aca gat				1253
Ser Lys Ala Ile Val Asp Asn Lys Asn Leu Ser Lys Gly Lys Thr Asp				
391	396	401	406	
ctt ctg gta ctc ttt tta atg gat cat cag aaa gat gtt ttt aag att				1301
Leu Leu Val Leu Phe Leu Met Asp His Gln Lys Asp Val Phe Lys Ile				
407	412	417	422	
cct gga act cta cat aaa att gta agt gtt aag ctt atg gcc ata cag				1349
Pro Gly Thr Leu His Lys Ile Val Ser Val Lys Leu Met Ala Ile Gln				
423	428	433	438	

aac gga aga gat cca aat aga gat gca gga tat att tat tgc cag aga 1397
 Asn Gly Arg Asp Pro Asn Arg Asp Ala Gly Tyr Ile Tyr Cys Gln Arg
 439 444 449 454

att gat caa cgt gac tat tcc aac aat aca gag aag aca acc aaa gat 1445
 Ile Asp Gln Arg Asp Tyr Ser Asn Asn Thr Glu Lys Thr Thr Lys Asp
 455 460 465 470

gag ctg ttg aat tta cta aaa act ctt gat gag gat tca aaa ctt tct 1493
 Glu Leu Leu Asn Leu Leu Lys Thr Leu Asp Glu Asp Ser Lys Leu Ser
 471 476 481 486

gcc aaa gag aag aaa aaa ttg cta ggt caa ttc tat aag tgt cac cca 1541
 Ala Lys Glu Lys Lys Lys Leu Leu Gly Gln Phe Tyr Lys Cys His Pro
 487 492 497 502

gac atc ttt att gag cat ttt gga gac tga g tttttaatat ctgtatataa 1592
 Asp Ile Phe Ile Glu His Phe Gly Asp *
 503 508

gttgtgtatt ttaagaataa attatgtatc ctaaatatcc aatcacattt gtaagtgtgg 1652

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tagcggtagc g atg gac act ctg gat cga gta gta aag ccc aaa acg aaa 170
 Met Asp Thr Leu Asp Arg Val Val Lys Pro Lys Thr Lys
 1 5 10

aga gcc aag aga ttc ctt gag aag aga gaa ccg aaa ctc aat gaa aat 218
 Arg Ala Lys Arg Phe Leu Glu Lys Arg Glu Pro Lys Leu Asn Glu Asn
 14 19 24 29

att aaa aat gcc atg ctg att aaa ggg gga aat gca aat gca aca gtg 266
 Ile Lys Asn Ala Met Leu Ile Lys Gly Gly Asn Ala Asn Ala Thr Val
 30 35 40 45

aca aaa gta ctt aaa gat gtg tat gca ctg aaa aaa cca tac agt gta 314
 Thr Lys Val Leu Lys Asp Val Tyr Ala Leu Lys Lys Pro Tyr Ser Val
 46 51 56 61

aag cga cct gca gaa agg ata aca gaa gac cac gag aaa aag tca aaa 1034
 Lys Arg Pro Ala Glu Arg Ile Thr Glu Asp His Glu Lys Lys Ser Lys
 286 291 296 301

aga att aaa aaa aat tga tggaac ttagccagcc actattatatt cattgtgttc 1088
 Arg Ile Lys Lys Asn *
 302 307

tacttaagag aattatcaag catcaatcca ttcagagttt cttataagat cttattatat 1148

atTTTTataa catgataatt ttacgatata ttattatgaa cagtaatata ctagtattaa 1208

gtgtaaagta agccttttat ttgagacatt acaccctggg gtgccatttt ctcttgtgat 1268

atccccctgcc ctccacaaat tcttctttct cattgggtgg atggatgggt gaggagggat 1328

ctccataaacc attgggatttt ttttgaattt ctggccttag ctaaagaaaag ccacagaaaag 1388

ccggacccgc aggagctgtg taaacaatct cagtatgaat tacctggaaa gttaacctcc 1448

tctcccaaca tggatctaca ttctgatttt tattttctac ttttctttta ttttgctga 1508

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 Phe Asn Leu Asp Val Glu Lys Leu Thr Val Tyr Ser Gly Pro Lys Gly
 11 16 21 26

agc tac ttc ggc tac gcc gtg gac ttc cac ata ccc gac gcc cgc aca 148
 Ser Tyr Phe Gly Tyr Ala Val Asp Phe His Ile Pro Asp Ala Arg Thr
 27 32 37 42

gcg agt gtc ttg gtg ggg gcg ccc aaa gcc aac acc agc cag ccc gat 196
 Ala Ser Val Leu Val Gly Ala Pro Lys Ala Asn Thr Ser Gln Pro Asp
 43 48 53 58

atc gtg gaa ggg gga gcc gtc tat tac tgt cct tgg ccc gcg gag ggg 244
 Ile Val Glu Gly Gly Ala Val Tyr Tyr Cys Pro Trp Pro Ala Glu Gly

59	64	69	74	
tct gcg cag tgc agg cag ata ccg ttt gac acc acc aac aac aga aag Ser Ala Gln Cys Arg Gln Ile Pro Phe Asp Thr Thr Asn Asn Arg Lys 75 80 85 90				292
atc aga gtt aat gga acc aaa gaa cct atc gag ttc aaa tcc aat cag Ile Arg Val Asn Gly Thr Lys Glu Pro Ile Glu Phe Lys Ser Asn Gln 91 96 101 106				340
tgg ttt gga gca aca gtg aaa gct cac aaa gga aaa gtt gtg gcc tgt Trp Phe Gly Ala Thr Val Lys Ala His Lys Gly Lys Val Val Ala Cys 107 112 117 122				388
gct cct tta tat cac tgg aga act ctt aaa ccg aca cca gaa aaa gga Ala Pro Leu Tyr His Trp Arg Thr Leu Lys Pro Thr Pro Glu Lys Gly 123 128 133 138				436
cca gtt ggc acc tgc tat gta gca att cag aac ttc agc gct tat gcc Pro Val Gly Thr Cys Tyr Val Ala Ile Gln Asn Phe Ser Ala Tyr Ala 139 144 149 154				484
gag ttc tct cct tgc gga aac agc aat gct gat ccg gaa ggc cag ggt Glu Phe Ser Pro Cys Gly Asn Ser Asn Ala Asp Pro Glu Gly Gln Gly 155 160 165 170				532
tac tgc caa gca gga ttt agt ctg gat ttt tat aag aat gga gac ctt Tyr Cys Gln Ala Gly Phe Ser Leu Asp Phe Tyr Lys Asn Gly Asp Leu 171 176 181 186				580
att gtg gga gga cct ggg agt ttc tac tgg caa gga caa gtg atc act Ile Val Gly Gly Pro Gly Ser Phe Tyr Trp Gln Gly Gln Val Ile Thr 187 192 197 202				628
gcc agt gtt gca gat atc att gca aat tac tca ttc aag gat atc ctc Ala Ser Val Ala Asp Ile Ile Ala Asn Tyr Ser Phe Lys Asp Ile Leu 203 208 213 218				676
agg aaa ctg gca gga gaa aag cag acg gaa gtg gct cca gct tcc tat Arg Lys Leu Ala Gly Glu Lys Gln Thr Glu Val Ala Pro Ala Ser Tyr 219 224 229 234				724
gat gac agt tac ctt gga tac tca gtt gct gct ggg gag ttt act ggg Asp Asp Ser Tyr Leu Gly Tyr Ser Val Ala Ala Gly Glu Phe Thr Gly 235 240 245 250				772
gat tct cag caa gaa ttg gtt gct gga att cca aga gga gca cag aat Asp Ser Gln Gln Glu Leu Val Ala Gly Ile Pro Arg Gly Ala Gln Asn 251 256 261 266				820
ttt gga tat gtt tcc atc att aac tcc tac gat atg acg ttt att cag Phe Gly Tyr Val Ser Ile Ile Asn Ser Tyr Asp Met Thr Phe Ile Gln 267 272 277 282				868
aat ttc acg gga gaa cag atg gca tct tat ttt gga tat acc gtt gtc Asn Phe Thr Gly Glu Gln Met Ala Ser Tyr Phe Gly Tyr Thr Val Val 283 288 293 298				916

gta tca gat gtt aac agt gat gga ctg gat gat gtc ctg gtt ggg gca	964
Val Ser Asp Val Asn Ser Asp Gly Leu Asp Asp Val Leu Val Gly Ala	
299 304 309 314	
cct ctc ttt atg gaa cgt gaa ttt gag agc aac ccc aga gaa gta ggg	1012
Pro Leu Phe Met Glu Arg Glu Phe Glu Ser Asn Pro Arg Glu Val Gly	
315 320 325 330	
caa atc tac ctg tat ttg caa gtg agc tct ctc ctc ttc aga gac ccc	1060
Gln Ile Tyr Leu Tyr Leu Gln Val Ser Ser Leu Leu Phe Arg Asp Pro	
331 336 341 346	
cag atc ctc act ggc acc gag acg ttt ggg aga ttc ggt agt gct atg	1108
Gln Ile Leu Thr Gly Thr Glu Thr Phe Gly Arg Phe Gly Ser Ala Met	
347 352 357 362	
gca cac tta gga gac ctg aac caa gat ggc tac aat gac att gcc atc	1156
Ala His Leu Gly Asp Leu Asn Gln Asp Gly Tyr Asn Asp Ile Ala Ile	
363 368 373 378	
gga gtg cct ttt gca ggc aag gat caa aga ggc aaa gtg ctc att tat	1204
Gly Val Pro Phe Ala Gly Lys Asp Gln Arg Gly Lys Val Leu Ile Tyr	
379 384 389 394	
aat ggg aac aaa gat ggc tta aac acc aag cct tcc caa gtt ctg caa	1252
Asn Gly Asn Lys Asp Gly Leu Asn Thr Lys Pro Ser Gln Val Leu Gln	
395 400 405 410	
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Gly Val Trp Ala Ser His Ala Val Pro Ser Gly Phe Gly Phe Thr Leu	
411 416 421 426	
aga gga gat tca gac ata gac aag aat gat tac cca gat ttg att gtg	1348
Arg Gly Asp Ser Asp Ile Asp Lys Asn Asp Tyr Pro Asp Leu Ile Val	
427 432 437 442	
ggt gca ttt gga aca gga aaa gtc gct gtt tac aga gca aga ccg gtt	1396
Gly Ala Phe Gly Thr Gly Lys Val Ala Val Tyr Arg Ala Arg Pro Val	
443 448 453 458	
gtg act gta gat gcc cag ctt ctg ctg cac cca atg att atc aat ctt	1444
Val Thr Val Asp Ala Gln Leu Leu Leu His Pro Met Ile Ile Asn Leu	
459 464 469 474	
gaa aat aaa act tgc cag gtt cca gac tct atg aca tct gct gcc tgc	1492
Glu Asn Lys Thr Cys Gln Val Pro Asp Ser Met Thr Ser Ala Ala Cys	
475 480 485 490	
ttt tct tta aga gta tgt gca tct gtc aca ggc cag agc att gca aac	1540
Phe Ser Leu Arg Val Cys Ala Ser Val Thr Gly Gln Ser Ile Ala Asn	
491 496 501 506	
aca ata gtc ttg atg gca gag gtg caa tta gat tcc ctg aaa cag aaa	1588
Thr Ile Val Leu Met Ala Glu Val Gln Leu Asp Ser Leu Lys Gln Lys	
507 512 517 522	

gga gct att aaa cgg acg ctc ttc ctt gat aac cat cag gct cat cgc	1636
Gly Ala Ile Lys Arg Thr Leu Phe Leu Asp Asn His Gln Ala His Arg	
523 528 533 538	
gtc ttc cct ctt gtg ata aaa agg cag aaa tcc cac cag tgc cag gat	1684
Val Phe Pro Leu Val Ile Lys Arg Gln Lys Ser His Gln Cys Gln Asp	
539 544 549 554	
ttc atc gtt tac ctt cga gat gaa act gaa ttc cga gat aaa tta tct	1732
Phe Ile Val Tyr Leu Arg Asp Glu Thr Glu Phe Arg Asp Lys Leu Ser	
555 560 565 570	
cca atc aac att agt ttg aat tac agt ttg gac gaa tcc acc ttt aaa	1780
Pro Ile Asn Ile Ser Leu Asn Tyr Ser Leu Asp Glu Ser Thr Phe Lys	
571 576 581 586	
gaa ggc ctg gaa gtg aaa cca ata ttg aac tac tac aga gaa aac att	1828
Glu Gly Leu Glu Val Lys Pro Ile Leu Asn Tyr Tyr Arg Glu Asn Ile	
587 592 597 602	
gtt agt gaa cag gct cac att ctg gtg gac tgt gga gaa gac aat ctg	1876
Val Ser Glu Gln Ala His Ile Leu Val Asp Cys Gly Glu Asp Asn Leu	
603 608 613 618	
tgt gtt cct gac ttg aag ctg tcg gct aga cca gat aag cat cag gta	1924
Cys Val Pro Asp Leu Lys Leu Ser Ala Arg Pro Asp Lys His Gln Val	
619 624 629 634	
atc att gga gat gaa aat cac ctt atg ctc ata ata aat gca aga aat	1972
Ile Ile Gly Asp Glu Asn His Leu Met Leu Ile Ile Asn Ala Arg Asn	
635 640 645 650	
gaa ggg gaa gga gca tat gaa gct gaa ctc ttt gta atg ata cca gaa	2020
Glu Gly Glu Gly Ala Tyr Glu Ala Glu Leu Phe Val Met Ile Pro Glu	
651 656 661 666	
gag gca gat tat gtt gga atc gaa cgc aac aac aag gga ttt cga cca	2068
Glu Ala Asp Tyr Val Gly Ile Glu Arg Asn Asn Lys Gly Phe Arg Pro	
667 672 677 682	
ctg agc tgt gag tac aag atg gaa aat gta acc agg atg gtg gtg tgt	2116
Leu Ser Cys Glu Tyr Lys Met Glu Asn Val Thr Arg Met Val Val Cys	
683 688 693 698	
gac ctt ggg aac cct atg gtg tct gga aca aat tat tcc ctg ggc ctc	2164
Asp Leu Gly Asn Pro Met Val Ser Gly Thr Asn Tyr Ser Leu Gly Leu	
699 704 709 714	
cga ttt gca gtt cca cgt ctt gag aaa aca aac atg agc att aac ttc	2212
Arg Phe Ala Val Pro Arg Leu Glu Lys Thr Asn Met Ser Ile Asn Phe	
715 720 725 730	
gat ctc caa atc aga agt tcc aac aag gac aat cca gac agc aat ttt	2260
Asp Leu Gln Ile Arg Ser Ser Asn Lys Asp Asn Pro Asp Ser Asn Phe	
731 736 741 746	
gtg agc ctg caa atc aac atc act gct gta gcg cag gtg gaa ata aga	2308

Val	Ser	Leu	Gln	Ile	Asn	Ile	Thr	Ala	Val	Ala	Gln	Val	Glu	Ile	Arg	
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gga	gtg	tca	cac	cct	ccg	cag	att	gtt	ctg	ccc	att	cat	aac	tgg	gaa	2356
Gly	Val	Ser	His	Pro	Pro	Gln	Ile	Val	Leu	Pro	Ile	His	Asn	Trp	Glu	
763					768					773					778	
cca	gaa	gag	gag	ccc	cac	aaa	gag	gag	gag	gtt	gga	cca	ttg	gtg	gaa	2404
Pro	Glu	Glu	Glu	Pro	His	Lys	Glu	Glu	Glu	Val	Gly	Pro	Leu	Val	Glu	
779					784					789					794	
cat	att	tat	gag	ctg	cac	aat	att	gga	cca	agt	acc	atc	agt	gac	acc	2452
His	Ile	Tyr	Glu	Leu	His	Asn	Ile	Gly	Pro	Ser	Thr	Ile	Ser	Asp	Thr	
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atc	ctg	gag	gtg	ggc	tgg	cct	ttc	tct	gcc	cgg	gat	gaa	ttt	ctt	ctc	2500
Ile	Leu	Glu	Val	Gly	Trp	Pro	Phe	Ser	Ala	Arg	Asp	Glu	Phe	Leu	Leu	
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Tyr	Ile	Phe	His	Ile	Gln	Thr	Leu	Gly	Pro	Leu	Gln	Cys	Gln	Pro	Asn	
827					832					837					842	
cct	aat	atc	aat	cca	cag	gat	ata	aag	cct	gct	gcc	tcc	cca	gag	gac	2596
Pro	Asn	Ile	Asn	Pro	Gln	Asp	Ile	Lys	Pro	Ala	Ala	Ser	Pro	Glu	Asp	
843					848					853					858	
acc	cct	gag	ctc	agc	gcc	ttt	ttg	cga	aac	tct	act	att	cct	cat	ctt	2644
Thr	Pro	Glu	Leu	Ser	Ala	Phe	Leu	Arg	Asn	Ser	Thr	Ile	Pro	His	Leu	
859					864					869					874	
gtc	agg	aag	agg	gat	gta	cat	gtg	gtc	gaa	ttc	cac	aga	cag	agc	cct	2692
Val	Arg	Lys	Arg	Asp	Val	His	Val	Val	Glu	Phe	His	Arg	Gln	Ser	Pro	
875					880					885					890	
gca	aaa	ata	ctg	aat	tgt	aca	aat	atc	gag	tgt	tta	caa	atc	tcc	tgt	2740
Ala	Lys	Ile	Leu	Asn	Cys	Thr	Asn	Ile	Glu	Cys	Leu	Gln	Ile	Ser	Cys	
891					896					901					906	
gca	gtg	gga	cga	ctc	gaa	gga	gga	gaa	agc	gca	gtc	ctg	aaa	gtc	agg	2788
Ala	Val	Gly	Arg	Leu	Glu	Gly	Gly	Glu	Ser	Ala	Val	Leu	Lys	Val	Arg	
907					912					917					922	
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Ser	Arg	Leu	Trp	Ala	His	Thr	Phe	Leu	Gln	Arg	Lys	Asn	Asp	Pro	Tyr	
923					928					933					938	
gct	ctt	gca	tcc	ctg	gtg	tcc	ttt	gaa	gtt	aag	aag	atg	cct	tat	aca	2884
Ala	Leu	Ala	Ser	Leu	Val	Ser	Phe	Glu	Val	Lys	Lys	Met	Pro	Tyr	Thr	
939					944					949					954	
gat	cag	cca	gca	aaa	ctc	cca	gaa	gga	agc	ata	gca	att	aag	aca	tca	2932
Asp	Gln	Pro	Ala	Lys	Leu	Pro	Glu	Gly	Ser	Ile	Ala	Ile	Lys	Thr	Ser	
955					960					965					970	
gtt	att	tgg	gca	act	ccg	aat	gtt	tcc	ttc	tca	atc	cca	tta	tgg	gta	2980
Val	Ile	Trp	Ala	Thr	Pro	Asn	Val	Ser	Phe	Ser	Ile	Pro	Leu	Trp	Val	

971	976	981	986	
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Ile Ile Leu Ala Ile Leu Leu Gly Leu Leu Val Leu Ala Ile Leu Thr				
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Leu Ala Leu Trp Lys Cys Gly Phe Phe Asp Arg Ala Arg Pro Pro Gln				
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Pro Gly Ala Gly Ser Asp Ala Gln Gly Pro Gln Phe Gly Trp Asp His	
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Ser Leu His Lys Arg Lys Arg Leu Pro Pro Val Lys Arg Ser Leu Val	
32 37 42 47	
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Tyr Tyr Leu Lys Asn Arg Glu Val Arg Leu Gln Asn Glu Thr Ser Tyr	
48 53 58 63	
tct cga gtg ttg cat ggt tat gca gca cag caa ctt ccc agt ctc ctg	420
Ser Arg Val Leu His Gly Tyr Ala Ala Gln Gln Leu Pro Ser Leu Leu	
64 69 74 79	

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Lys Glu Arg Glu Phe His Leu Gly Thr Leu Asn Lys Val Phe Ala Ser	
80 85 90 95	
cag tgg ttg aat cat agg caa gtg gtg tgt ggc aca aaa tgc aac acg	516
Gln Trp Leu Asn His Arg Gln Val Val Cys Gly Thr Lys Cys Asn Thr	
96 101 106 111	
cta ttt gtc gta gat gtc cag aca agc cag atc acc aag atc ccc att	564
Leu Phe Val Val Asp Val Gln Thr Ser Gln Ile Thr Lys Ile Pro Ile	
112 117 122 127	
ctg aaa gac cgg gag cct gga ggt gtg acc cag cag ggc tgt ggt atc	612
Leu Lys Asp Arg Glu Pro Gly Gly Val Thr Gln Gln Gly Cys Gly Ile	
128 133 138 143	
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Asp Asn Pro Asn Ser Leu Ala Ile Tyr Arg Leu Pro Thr Leu Asp Pro	
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Trp Ile Ser Asp Thr Met Ala Val Ser Gly Ser Arg Asp Gly Ser Met	
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Gly Leu Trp Glu Val Thr Asp Asp Val Leu Thr Lys Ser Asp Ala Arg	
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His Asn Val Ser Arg Val Pro Val Tyr Ala His Ile Thr His Lys Ala	
224 229 234 239	
tta aag gac atc ccc aaa gaa gac aca aac cct gac aac tgc aag gtt	948
Leu Lys Asp Ile Pro Lys Glu Asp Thr Asn Pro Asp Asn Cys Lys Val	
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Arg Ala Leu Ala Phe Asn Asn Lys Asn Lys Glu Leu Gly Ala Val Ser	
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Ser Phe Leu Asp Pro Arg Gln Pro Ser Tyr Asn Val Lys Ser Val Cys	
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Phe Phe Pro Asn Ala Val Tyr Thr His Cys Tyr Asp Ser Ser Gly Thr	
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             Met Glu Pro Glu Thr Leu Glu Ala Arg Ile Asn Arg Ala
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acg aac ccc ctg aac aag gag ctc gac tgg gcc agc atc aac ggc ttc      216
Thr Asn Pro Leu Asn Lys Glu Leu Asp Trp Ala Ser Ile Asn Gly Phe
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tgc gag cag ctc aac gag gac ttt gag ggg cct cca ctc gcc acc cgg      264
Cys Glu Gln Leu Asn Glu Asp Phe Glu Gly Pro Pro Leu Ala Thr Arg
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ctg ctg gcc cac aag atc cag tcc cca cag gag tgg gag gcg atc cag      312
Leu Leu Ala His Lys Ile Gln Ser Pro Gln Glu Trp Glu Ala Ile Gln
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gcc ttg acg gtg ctg gaa aca tgc atg aag agc tgc ggc aag cgg ttc      360
Ala Leu Thr Val Leu Glu Thr Cys Met Lys Ser Cys Gly Lys Arg Phe
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cac gac gaa gtg ggc aag ttc cgc ttt ctc aac gag ctc atc aag gtc      408
His Asp Glu Val Gly Lys Phe Arg Phe Leu Asn Glu Leu Ile Lys Val
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gtg tct ccc aag tat ctg ggc tct cgg aca tcg gag aag gtg aag aac      456
Val Ser Pro Lys Tyr Leu Gly Ser Arg Thr Ser Glu Lys Val Lys Asn
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Lys Ile Leu Glu Leu Leu Tyr Ser Trp Thr Val Gly Leu Pro Glu Glu
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Val Lys Ile Ala Glu Ala Tyr Gln Met Leu Lys Lys Gln Gly Ile Val
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cca cgg ccg aag aat gtg atc ttt gaa gat gag gag aaa tcc aag atg      648
Pro Arg Pro Lys Asn Val Ile Phe Glu Asp Glu Glu Lys Ser Lys Met
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Asp Glu Ala Leu Ala Glu Ile Leu Gln Ala Asn Asp Asn Leu Thr Gln	
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Pro Thr Arg Pro Gly Glu Gln Ala Ser Pro Glu Gln Pro Ser Ala Ser	
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Val Ser Leu Leu Asp Asp Glu Leu Met Ser Leu Gly Leu Ser Asp Pro	
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Thr Pro Pro Ser Gly Pro Ser Leu Asp Gly Thr Gly Trp Asn Ser Phe	
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Gln Ser Ser Asp Ala Thr Glu Pro Pro Ala Pro Ala Leu Ala Gln Ala	
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Pro Ser Met Glu Ser Arg Pro Pro Ala Gln Thr Ser Leu Pro Ala Ser	
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Ser Gly Leu Asp Asp Leu Asp Leu Leu Gly Lys Thr Leu Leu Gln Gln	
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Ser Leu Pro Pro Glu Ser Gln Gln Val Arg Trp Glu Lys Gln Gln Pro	
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Thr Pro Arg Leu Thr Leu Arg Asp Leu Gln Asn Lys Ser Ser Ser Cys	
446 451 456 461	
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Ser Ser Pro Ser Ser Ser Ala Thr Ser Leu Leu His Thr Val Ser Pro	
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Glu Pro Pro Arg Pro Pro Gln Gln Pro Val Pro Thr Glu Leu Ser Leu	
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Ala Ser Ile Thr Val Pro Leu Glu Ser Ile Lys Pro Ser Asn Ile Leu	
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ccc gtg act gtg tat gac cag cac ggc ttc cgc atc ctc ttc cat ttt	1704
Pro Val Thr Val Tyr Asp Gln His Gly Phe Arg Ile Leu Phe His Phe	
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Ala Arg Asp Pro Leu Pro Gly Arg Ser Asp Val Leu Val Val Val Val	
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Ser Met Leu Ser Thr Ala Pro Gln Pro Ile Arg Asn Ile Val Phe Gln	
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Ser Ala Val Pro Lys Val Met Lys Val Lys Leu Gln Pro Pro Ser Gly	
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Lys Ile Glu Asp Phe Lys Val Gly Asn Leu Leu Gly Lys Gly Ser Phe						
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Ala Gly Val Tyr Arg Ala Glu Ser Ile His Thr Gly Leu Glu Val Ala						
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Ile Lys Met Ile Asp Lys Lys Ala Met Tyr Lys Ala Gly Met Val Gln						
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Arg Val Gln Asn Glu Val Lys Ile His Cys Gln Leu Lys His Pro Ser						
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Ile Leu Glu Leu Tyr Asn Tyr Phe Glu Asp Ser Asn Tyr Val Tyr Leu						
72 77 82 87						
gta tta gaa atg tgc cat aat gga gaa atg aac agg tat cta aag aat						642
Val Leu Glu Met Cys His Asn Gly Glu Met Asn Arg Tyr Leu Lys Asn						
88 93 98 103						
aga gtg aaa ccc ttc tca gaa aat gaa gct cga cac ttc atg cac cag						690
Arg Val Lys Pro Phe Ser Glu Asn Glu Ala Arg His Phe Met His Gln						
104 109 114 119						
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att gct gat ttt ggg ctg gca act caa ctg aaa atg cca cat gaa aag						834
Ile Ala Asp Phe Gly Leu Ala Thr Gln Leu Lys Met Pro His Glu Lys						
152 157 162 167						
cac tat aca tta tgt gga act cct aac tac att tca cca gaa att gcc						882
His Tyr Thr Leu Cys Gly Thr Pro Asn Tyr Ile Ser Pro Glu Ile Ala						
168 173 178 183						
act cga agt gca cat ggc ctt gaa tct gat gtt tgg tcc ctg ggc tgt						930
Thr Arg Ser Ala His Gly Leu Glu Ser Asp Val Trp Ser Leu Gly Cys						
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Phe Met Ser Arg Asn Ser Ser Thr Lys Ser Lys Asp Leu Gly Thr Val	
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Val Ile Gln Asp Ala Glu Glu Arg Pro His Ser Arg Tyr Leu Arg Arg	
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Ala Tyr Ser Ser Asp Arg Ser Gly Thr Ser Asn Ser Gln Ser Gln Ala	
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Lys Thr Tyr Thr Met Glu Arg Cys His Ser Ala Glu Met Leu Ser Val	
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Ser Lys Arg Ser Gly Gly Gly Glu Asn Glu Glu Arg Tyr Ser Pro Thr	
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Ser	Ser	Gly	Ser	Phe	Glu	Arg	Pro	Asp	Asn	Asn	Gln	Ala	Leu	Ser	Asn		
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Gln	Thr	Glu	Thr	Val	Gln	Gln	Trp	Phe	Gly	Asn	Leu	Gln	Ile	Asn	Ala		
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Thr Gln Arg Leu Ser Glu Arg Asn Cys Ile Glu Ile Val Asn Lys Leu						
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Tyr Ile Thr Pro Ala Gln Ile Ser Lys Glu Met Arg Asp Glu Leu His						
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Val Arg Gly Gly Arg Val Asn Ile Val Asp Leu Gln Gln Val Ile Asn						
72	77	82	87			
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Val Asp Leu Ile His Ile Glu Asn Arg Ile Gly Asp Ile Ile Lys Ser						
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Glu Lys His Val Gln Leu Val Leu Gly Gln Leu Ile Asp Glu Asn Tyr						
104	109	114	119			
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Leu Asp Arg Leu Ala Glu Glu Val Asn Asp Lys Leu Gln Glu Ser Gly						
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cag gtc acc ata tca gaa ctg tgt aaa act tat gat ctt cct ggg aac	544					
Gln Val Thr Ile Ser Glu Leu Cys Lys Thr Tyr Asp Leu Pro Gly Asn						
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Phe Leu Thr Gln Ala Leu Thr Gln Arg Leu Gly Arg Ile Ile Ser Gly						
152	157	162	167			
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His Ile Asp Leu Asp Asn Arg Gly Val Ile Phe Thr Glu Ala Phe Val						
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Ala Arg His Lys Ala Arg Ile Arg Gly/Leu Phe Ser Ala Ile Thr Arg						
184	189	194	199			

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Asp Thr Val Val Val Ser Glu Lys Phe Ile Asn Asp Cys Thr Glu Leu	
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Phe Arg Glu Leu Met His Gln Lys Ala Glu Lys Glu Met Lys Asn Asn	
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Pro Val His Leu Ile Thr Glu Glu Asp Leu Lys Gln Ile Ser Thr Leu	
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Lys Ala Thr Glu Gly Ser Gly Ser Met Arg Gly Gly Gly Gly Gly Asn 424 429 434 439	
gcc aga gag tac aaa att aaa aaa gtc aag aag aaa gga aga aaa gat Ala Arg Glu Tyr Lys Ile Lys Lys Val Lys Lys Lys Gly Arg Lys Asp 440 445 450 455	1456
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Gly Ile Gln Gly Lys Lys Gly Asp Lys Gly Asn Gln Gly Glu Lys Gly
90 95 100 105

att cag ggt caa aag gga gaa aat gga aga cag gga att cca ggg caa 447
Ile Gln Gly Gln Lys Gly Glu Asn Gly Arg Gln Gly Ile Pro Gly Gln
106 111 116 121

cag gga att caa ggc cat cat ggt gca aaa gga gag aga ggt gaa aag 495
Gln Gly Ile Gln Gly His His Gly Ala Lys Gly Glu Arg Gly Glu Lys
122 127 132 137

gga gaa cct ggt gtc cga ggt gcc att gga tca aaa gga gaa tct ggg 543
Gly Glu Pro Gly Val Arg Gly Ala Ile Gly Ser Lys Gly Glu Ser Gly
138 143 148 153

gtg gat ggc ttg atg ggg ccc gca ggt cct aag ggg caa cct ggg gat 591
Val Asp Gly Leu Met Gly Pro Ala Gly Pro Lys Gly Gln Pro Gly Asp
154 159 164 169

cca ggt cct cag gga ccc cca ggt ttg gat ggg aag ccc gga aga gag 639
Pro Gly Pro Gln Gly Pro Pro Gly Leu Asp Gly Lys Pro Gly Arg Glu
170 175 180 185

ttt tca gaa caa ttt att cga caa gtt tgc aca gat gta ata aga gcc 687
Phe Ser Glu Gln Phe Ile Arg Gln Val Cys Thr Asp Val Ile Arg Ala
186 191 196 201

cag cta cca gtc tta ctt cag agt gga aga att aga aat tgt gat cat 735
Gln Leu Pro Val Leu Leu Gln Ser Gly Arg Ile Arg Asn Cys Asp His

202	207	212	217	
tgc ctg tcc caa cat	ggc tcc ccg ggt att	cct ggg cca cct ggt ccg		783
Cys Leu Ser Gln His	Gly Ser Pro Gly Ile	Pro Gly Pro Pro Gly Pro		
218	223	228	233	
ata ggc cca gag ggt	ccc aga gga tta cct	ggt ttg cca gga aga gat		831
Ile Gly Pro Glu Gly	Pro Arg Gly Leu Pro	Gly Leu Pro Gly Arg Asp		
234	239	244	249	
ggt gtt cct gga tta	gtg ggt gtc cct gga	cgt cca ggt gtc aga gga		879
Gly Val Pro Gly Leu	Val Gly Val Pro Gly	Arg Pro Gly Val Arg Gly		
250	255	260	265	
tta aaa ggc cta cca	gga aga aat ggg gaa	aaa ggg agc caa ggg ttt		927
Leu Lys Gly Leu Pro	Gly Arg Asn Gly Glu	Lys Gly Ser Gln Gly Phe		
266	271	276	281	
ggg tat cct gga gaa	caa ggt cct cct ggt	ccc cca ggt cca gag ggc		975
Gly Tyr Pro Gly Glu	Gln Gly Pro Pro Gly	Pro Pro Gly Pro Glu Gly		
282	287	292	297	
cct cct gga ata agc	aaa gaa ggt cct cca	gga gac cca ggt ctc cct		1023
Pro Pro Gly Ile Ser	Lys Glu Gly Pro Pro	Gly Asp Pro Gly Leu Pro		
298	303	308	313	
ggc aaa gat gga gac	cat gga aaa cct gga	atc caa ggg caa cca ggc		1071
Gly Lys Asp Gly Asp	His Gly Lys Pro Gly	Ile Gln Gly Gln Pro Gly		
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ccc cca ggc atc tgc	gac cca tca cta tgt	ttt agt gta att gcc aga		1119
Pro Pro Gly Ile Cys	Asp Pro Ser Leu Cys	Phe Ser Val Ile Ala Arg		
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Arg Asp Pro Phe Arg	Lys Gly Pro Asn Tyr	*		
346	351	356		
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aatcccttga aaagaaactt	aagtacctcg gcgtttttat	tttttttttc ttatggaaaa		1290
aaatataaaa gatcacatat	actgatttta aaggctcctc	agtcatttgg agcccttgga		1350
ttagcagcat taattaaatc	tcaagggttt cttgtaaagt	ccatttatgt taatcaaagt		1410
tgaatataaa aatccaccat	tgctgttag ccagtcagtt	ttagtcactg tgaaatattt		1470
cacattcagc ctccatgcag	tagagatttg agtttaattt	catgtccatg tgactttcat		1530
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cctctgaata agattagagt	gtttcttaat tcatttcaaa	ctctaaaatt agattaatgg		1770

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 aatgctctag ttgaaagaaa aggaaaactc ctgaaatcct agaatgtctt gttattttta 2070
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 Met
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 gaa gaa gcc tgt cag gtg cag aca act aag cga ggg gat cct cat gag 165
 Glu Glu Ala Cys Gln Val Gln Thr Thr Lys Arg Gly Asp Pro His Glu
 2 7 12 17
 tta aga aac ata ttt cta cag tat gcc agt act gag gtt gat gga gag 213
 Leu Arg Asn Ile Phe Leu Gln Tyr Ala Ser Thr Glu Val Asp Gly Glu
 18 23 28 33
 cgt tac atg acc cca gaa gac ttt gtt cag cgc tat ctt gga ctg tat 261
 Arg Tyr Met Thr Pro Glu Asp Phe Val Gln Arg Tyr Leu Gly Leu Tyr
 34 39 44 49
 aat gat cca aat agt aac cca aag atc gtg cag ctc ttg gca gga gta 309
 Asn Asp Pro Asn Ser Asn Pro Lys Ile Val Gln Leu Leu Ala Gly Val
 50 55 60 65
 gct gat caa acc aag gat ggg ttg atc tcc tat caa gag ttt ttg gca 357
 Ala Asp Gln Thr Lys Asp Gly Leu Ile Ser Tyr Gln Glu Phe Leu Ala
 66 71 / 76 81
 ttt gaa tct gtt tta tgt gct cca gat tcc atg ttc ata gtg gct ttc 405

Phe	Glu	Ser	Val	Leu	Cys	Ala	Pro	Asp	Ser	Met	Phe	Ile	Val	Ala	Phe		
82					87					92					97		
cag	ttg	ttt	gac	aag	agt	gga	aat	gga	gag	gtg	aca	ttt	gaa	aat	gtc	453	
Gln	Leu	Phe	Asp	Lys	Ser	Gly	Asn	Gly	Glu	Val	Thr	Phe	Glu	Asn	Val		
98					103					108					113		
aaa	gaa	att	ttt	gga	cag	act	att	att	cat	cat	cat	atc	cct	ttt	aac	501	
Lys	Glu	Ile	Phe	Gly	Gln	Thr	Ile	Ile	His	His	His	Ile	Pro	Phe	Asn		
114					119					124					129		
tgg	gat	tgt	gaa	ttt	atc	cga	ctg	cat	ttt	ggg	cat	aac	cgg	aag	aag	549	
Trp	Asp	Cys	Glu	Phe	Ile	Arg	Leu	His	Phe	Gly	His	Asn	Arg	Lys	Lys		
130					135					140					145		
cat	ctt	aac	tac	aca	gaa	ttc	acg	cag	ttt	ctc	cag	gag	ctg	caa	ttg	597	
His	Leu	Asn	Tyr	Thr	Glu	Phe	Thr	Gln	Phe	Leu	Gln	Glu	Leu	Gln	Leu		
146					151					156					161		
gaa	cat	gca	aga	caa	gcc	ttt	gca	ctc	aaa	gac	aaa	agc	aaa	agt	ggc	645	
Glu	His	Ala	Arg	Gln	Ala	Phe	Ala	Leu	Lys	Asp	Lys	Ser	Lys	Ser	Gly		
162					167					172					177		
atg	att	tct	ggt	ctg	gat	ttc	agt	gac	atc	atg	ggt	acc	att	aga	tct	693	
Met	Ile	Ser	Gly	Leu	Asp	Phe	Ser	Asp	Ile	Met	Val	Thr	Ile	Arg	Ser		
178					183					188					193		
cac	atg	ctt	act	cct	ttt	gtg	gag	gag	aac	tta	ggt	tca	gca	gct	gga	741	
His	Met	Leu	Thr	Pro	Phe	Val	Glu	Glu	Asn	Leu	Val	Ser	Ala	Ala	Gly		
194					199					204					209		
gga	agt	atc	tca	cac	cag	ggt	agc	ttc	tcc	tac	ttc	aat	gca	ttt	aac	789	
Gly	Ser	Ile	Ser	His	Gln	Val	Ser	Phe	Ser	Tyr	Phe	Asn	Ala	Phe	Asn		
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tcg	tta	ctg	aat	aac	atg	gag	ctt	ggt	cgt	aag	ata	tat	agc	act	cta	837	
Ser	Leu	Leu	Asn	Asn	Met	Glu	Leu	Val	Arg	Lys	Ile	Tyr	Ser	Thr	Leu		
226					231					236					241		
gct	ggc	aca	agg	aaa	gat	ggt	gaa	gtc	aca	aag	gag	gaa	ttt	gcc	cag	885	
Ala	Gly	Thr	Arg	Lys	Asp	Val	Glu	Val	Thr	Lys	Glu	Glu	Phe	Ala	Gln		
242					247					252					257		
agt	gcc	ata	cgc	tat	gga	caa	gtc	aca	cca	cta	gaa	att	gat	att	cta	933	
Ser	Ala	Ile	Arg	Tyr	Gly	Gln	Val	Thr	Pro	Leu	Glu	Ile	Asp	Ile	Leu		
258					263					268					273		
tat	cag	ctt	gca	gac	tta	tat	aat	gct	tca	ggg	cgc	ttg	act	ttg	gca	981	
Tyr	Gln	Leu	Ala	Asp	Leu	Tyr	Asn	Ala	Ser	Gly	Arg	Leu	Thr	Leu	Ala		
274					279					284					289		
gat	att	gag	aga	ata	gcc	cca	ttg	gct	gag	ggg	gcc	tta	cct	tac	aac	1029	
Asp	Ile	Glu	Arg	Ile	Ala	Pro	Leu	Ala	Glu	Gly	Ala	Leu	Pro	Tyr	Asn		
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306		311		316		321	
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Trp Leu Gln Ile Ala Glu Ser Ala Tyr Arg Phe Thr Leu Gly Ser Val							
322		327		332		337	
gct gga gct gtg gga gcc act gca gtg tat cct ata gat ctg gtg aag	1173						
Ala Gly Ala Val Gly Ala Thr Ala Val Tyr Pro Ile Asp Leu Val Lys							
338		343		348		353	
acc cga atg caa aac cag cgt ggc tct ggc tct gtt gtt ggg gag cta	1221						
Thr Arg Met Gln Asn Gln Arg Gly Ser Gly Ser Val Val Gly Glu Leu							
354		359		364		369	
atg tac aaa aac agc ttt gac tgt ttt aag aaa gtc ttg cgt tat gag	1269						
Met Tyr Lys Asn Ser Phe Asp Cys Phe Lys Lys Val Leu Arg Tyr Glu							
370		375		380		385	
ggc ttc ttt gga ctc tac agg ggt ctg ata cca caa ctt ata ggg gtt	1317						
Gly Phe Phe Gly Leu Tyr Arg Gly Leu Ile Pro Gln Leu Ile Gly Val							
386		391		396		401	
gct cca gaa aag gcc att aaa ctg act gtt aat gat ttt gtt cgg gac	1365						
Ala Pro Glu Lys Ala Ile Lys Leu Thr Val Asn Asp Phe Val Arg Asp							
402		407		412		417	
aaa ttt acc aga aga gat ggc tct gtt cca ctt cca gca gaa gtt ctt	1413						
Lys Phe Thr Arg Arg Asp Gly Ser Val Pro Leu Pro Ala Glu Val Leu							
418		423		428		433	
gct gga ggc tgt gct gga ggc tct cag gtc att ttt acc aac cca ttg	1461						
Ala Gly Gly Cys Ala Gly Gly Ser Gln Val Ile Phe Thr Asn Pro Leu							
434		439		444		449	
gag ata gtg aag att cgt ctg caa gta gct gga gag atc acc acg gga	1509						
Glu Ile Val Lys Ile Arg Leu Gln Val Ala Gly Glu Ile Thr Thr Gly							
450		455		460		465	
ccc aga gtc agc gcc ctg aat gtg ctc cgg gac ttg gga att ttt ggt	1557						
Pro Arg Val Ser Ala Leu Asn Val Leu Arg Asp Leu Gly Ile Phe Gly							
466		471		476		481	
ctg tat aag ggt gcc aaa gcg tgt ttc ctc cga gac att ccc ttc tct	1605						
Leu Tyr Lys Gly Ala Lys Ala Cys Phe Leu Arg Asp Ile Pro Phe Ser							
482		487		492		497	
gca atc tat ttt cct gtt tat gct cat tgc aaa cta ctt ctg gct gat	1653						
Ala Ile Tyr Phe Pro Val Tyr Ala His Cys Lys Leu Leu Leu Ala Asp							
498		503		508		513	
gaa aat gga cac gtg gga ggt tta aat ctt ctt gca gct gga gcc atg	1701						
Glu Asn Gly His Val Gly Gly Leu Asn Leu Leu Ala Ala Gly Ala Met							
514		519		524		529	
gca ggt gtc cca gct gca tct ctg gtg acc cct gct gat gtc atc aag	1749						
Ala Gly Val Pro Ala Ala Ser Leu Val Thr Pro Ala Asp Val Ile Lys							
530		535		540		545	

aca aga ctg cag gtg gct gcc cgc gct ggc cag acg aca tac agt ggt	1797
Thr Arg Leu Gln Val Ala Ala Arg Ala Gly Gln Thr Thr Tyr Ser Gly	
546 551 556 561	
gtc atc gac tgt ttc agg aag att ctc cgg gaa gaa ggg ccc tca gca	1845
Val Ile Asp Cys Phe Arg Lys Ile Leu Arg Glu Glu Gly Pro Ser Ala	
562 567 572 577	
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Phe Trp Lys Gly Thr Ala Ala Arg Val Phe Arg Ser Ser Pro Gln Phe	
578 583 588 593	
ggg gtt acc ttg gtc act tat gaa gtt ctc cag cgg tgg ttt tac att	1941
Gly Val Thr Leu Val Thr Tyr Glu Val Leu Gln Arg Trp Phe Tyr Ile	
594 599 604 609	
gat ttt gga ggc ctc aaa ccc gct ggt tca gaa cca aca cct aag tca	1989
Asp Phe Gly Gly Leu Lys Pro Ala Gly Ser Glu Pro Thr Pro Lys Ser	
610 615 620 625	
cgc att gca gac ctt cct cct gcc aac cct gat cac atc ggt gga tac	2037
Arg Ile Ala Asp Leu Pro Pro Ala Asn Pro Asp His Ile Gly Gly Tyr	
626 631 636 641	
aga ctc gcc aca gcc acg ttt gca ggc atc gaa aac aaa ttt ggc ctt	2085
Arg Leu Ala Thr Ala Thr Phe Ala Gly Ile Glu Asn Lys Phe Gly Leu	
642 647 652 657	
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Tyr Leu Pro Lys Phe Lys Ser Pro Ser Val Ala Val Val Gln Pro Lys	
658 663 668 673	
gca gca gtg gca gcc act cag tga tgagacaact gttgagtgtg gcaaaatggc	2187
Ala Ala Val Ala Ala Thr Gln *	
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ccaacaaatc acatttgtag aaatgtaatg cggttctgag tggcttgaaa tgtacagaat	2547
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 Lys Leu Arg Ser Leu Leu Pro Pro Asp Leu Arg Leu Gln Phe Trp Leu
 17 22 27 32

cat gcc cgc ctc caa aag tgc ttc ctc tcg agg ggt tgt ggt tct tac 144
 His Ala Arg Leu Gln Lys Cys Phe Leu Ser Arg Gly Cys Gly Ser Tyr
 33 38 43 48

tgc gca ggc gca aaa gca agt cct ctt ccg ggc aaa atg gcg atg gga 192
 Cys Ala Gly Ala Lys Ala Ser Pro Leu Pro Gly Lys Met Ala Met Gly
 49 54 59 64

cta atg tgc gga cgc cgg gag ctt ctg cgc ttg cta cag tcc ggg cgt 240
 Leu Met Cys Gly Arg Arg Glu Leu Leu Arg Leu Leu Gln Ser Gly Arg
 65 70 75 80

cgg gtc cac agc gtc gca ggg ccc tcg caa tgg ctt ggg aaa ccg ctg 288
 Arg Val His Ser Val Ala Gly Pro Ser Gln Trp Leu Gly Lys Pro Leu
 81 86 91 96

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 Thr Thr Arg Leu Leu Phe Pro Val Ala Pro Cys Cys Cys Arg Pro His
 97 102 107 112

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 Tyr Leu Phe Leu Ala Ala Ser Gly Pro Arg Ser Leu Ser Thr Ser Ala
 113 118 123 128

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 Ile Ser Phe Ala Glu Val Gln Val Gln Ala Pro Pro Val Val Ala Ala
 129 134 139 144

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 Thr Pro Ser Pro Thr Ala Val Pro Glu Val Ala Ser Gly Glu Thr Ala
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 Asp Val Val Gln Thr Ala Ala Glu Gln Ser Phe Ala Glu Leu Gly Leu
 161 166 171 176

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His Val Asp Leu Gly Leu Pro Trp Trp Gly Ala Ile Ala Ala Cys Thr	
193 198 203 208	
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Val Phe Ala Arg Cys Leu Ile Phe Pro Leu Ile Val Thr Gly Gln Arg	
209 214 219 224	
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Glu Ala Ala Arg Ile His Asn His Leu Pro Glu Ile Gln Lys Phe Ser	
225 230 235 240	
agt cga atc aga gag gcc aag tta gca gga gac cat att gag tat tac	768
Ser Arg Ile Arg Glu Ala Lys Leu Ala Gly Asp His Ile Glu Tyr Tyr	
241 246 251 256	
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Lys Ala Ser Ser Glu Met Ala Leu Tyr Gln Lys Lys His Gly Ile Lys	
257 262 267 272	
ctc tat aaa cct ctc att ctc cct gtg act cag gcc cca atc ttc atc	864
Leu Tyr Lys Pro Leu Ile Leu Pro Val Thr Gln Ala Pro Ile Phe Ile	
273 278 283 288	
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Ser Phe Phe Ile Ala Leu Arg Glu Met Ala Asn Leu Pro Val Pro Ser	
289 294 299 304	
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Leu Gln Thr Gly Gly Leu Trp Trp Phe Gln Asp Leu Thr Val Ser Asp	
305 310 315 320	
ccc atc tac ata tta cca ctg gca gtc act gct aca atg tgg gct gtt	1008
Pro Ile Tyr Ile Leu Pro Leu Ala Val Thr Ala Thr Met Trp Ala Val	
321 326 331 336	
ctt gag cta ggt gct gag aca ggt gtg caa agt tct gac ctt cag tgg	1056
Leu Glu Leu Gly Ala Glu Thr Gly Val Gln Ser Ser Asp Leu Gln Trp	
337 342 347 352	
atg aga aat gtc atc aga atg atg ccc ctg ata acc ttg ccc ata acc	1104
Met Arg Asn Val Ile Arg Met Met Pro Leu Ile Thr Leu Pro Ile Thr	
353 358 363 368	
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Met His Phe Pro Thr Ala Val Phe Met Tyr Trp Leu Ser Ser Asn Leu	
369 374 379 384	
ttt tcc ctg gtc caa gta tcc tgt ctc cgg att cca gca gta cgc act	1200
Phe Ser Leu Val Gln Val Ser Cys Leu Arg Ile Pro Ala Val Arg Thr	
385 390 395 400	
gta ctt aaa atc ccc cag cgt gtt gta cat gac ctg gac aaa tta cct	1248
Val Leu Lys Ile Pro Gln Arg Val Val His Asp Leu Asp Lys Leu Pro	
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50 55 60 65	
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Glu Gly Tyr Trp Leu Pro Gly Asp Glu Ile Asp Trp Glu Thr Glu Asn	
66 71 76 81	
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His Asp Trp Tyr Cys Phe Glu Cys His Leu Pro Gly Glu Val Leu Ile	
82 87 92 97	
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Cys Asp Leu Cys Phe Arg Val Tyr His Ser Lys Cys Leu Ser Asp Glu	
98 103 108 113	
ttc agg ctt aga gac agc agt agt ccc tgg cag tgc cca gtt tgc agg	562
Phe Arg Leu Arg Asp Ser Ser Ser Pro Trp Gln Cys Pro Val Cys Arg	
114 119 124 129	
agc att aag aag aag aat aca aac aaa cag gag atg ggc aca tac ctc	610
Ser Ile Lys Lys Lys Asn Thr Asn Lys Gln Glu Met Gly Thr Tyr Leu	
130 135 140 145	
aga ttc att gtc tcc cgc atg aag gag agg gct ata gat ctt aat aaa	658
Arg Phe Ile Val Ser Arg Met Lys Glu Arg Ala Ile Asp Leu Asn Lys	
146 151 156 161	
aag ggg aag gac aat aaa cac ccg atg tac agg agg ctg gtg cac tca	706
Lys Gly Lys Asp Asn Lys His Pro Met Tyr Arg Arg Leu Val His Ser	
162 167 172 177	
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Ala Val Asp Val Pro Thr Ile Gln Glu Lys Val Asn Glu Gly Lys Tyr	
178 183 188 193	
cga agt tat gaa gag ttc aaa gct gat gcc caa ttg ctt ctc cac aat	802
Arg Ser Tyr Glu Glu Phe Lys Ala Asp Ala Gln Leu Leu Leu His Asn	
194 199 204 209	
acc gtg att ttc tat gga gca gac agt gag caa gct gac att gcg agg	850
Thr Val Ile Phe Tyr Gly Ala Asp Ser Glu Gln Ala Asp Ile Ala Arg	
210 215 220 225	
atg cta tat aaa gac aca tgt cat gag ctg gat gaa ctg cag ctt tgc	898
Met Leu Tyr Lys Asp Thr Cys His Glu Leu Asp Glu Leu Gln Leu Cys	
226 231 236 241	
aag aat tgc ttt tac ttg tca aat gct cgt cct gac aac tgg ttc tgt	946
Lys Asn Cys Phe Tyr Leu Ser Asn Ala Arg Pro Asp Asn Trp Phe Cys	
242 247 252 257	
tat cct tgt ata cct aat cat gag ctg gtt tgg gct aaa atg aaa ggt	994
Tyr Pro Cys Ile Pro Asn His Glu Leu Val Trp Ala Lys Met Lys Gly	

258	263	268	273	
ttt ggg ttt tgg cca gcc aaa gtc atg cag	aaa gaa gac aat caa gtc	1042		
Phe Gly Phe Trp Pro Ala Lys Val Met Gln	Lys Glu Asp Asn Gln Val			
274	279	284	289	
gac gtt cgc ttc ttt ggc cac cac cac cag	agg gcc tgg att cct tct	1090		
Asp Val Arg Phe Phe Gly His His His Gln	Arg Ala Trp Ile Pro Ser			
290	295	300	305	
gaa aac att caa gat atc aca gtc aac att cat	cgg ctg cac gtg aag	1138		
Glu Asn Ile Gln Asp Ile Thr Val Asn Ile His	Arg Leu His Val Lys			
306	311	316	321	
cgc agt atg ggt tgg aaa aag gcc tgt gat	gag ctg gag ctg cat cag	1186		
Arg Ser Met Gly Trp Lys Lys Ala Cys Asp	Glu Leu Glu Leu His Gln			
322	327	332	337	
cgt ttc cta cga gaa ggg aga ttt tgg aaa tct	aag aat gag gac cga	1234		
Arg Phe Leu Arg Glu Gly Arg Phe Trp Lys	Ser Lys Asn Glu Asp Arg			
338	343	348	353	
ggt gag gaa gag gca gaa tcc agt atc tcc tcc	acc agt aat gag cag	1282		
Gly Glu Glu Glu Ala Glu Ser Ser Ile Ser	Ser Thr Ser Asn Glu Gln			
354	359	364	369	
cta aag gtc act caa gaa cca aga gca aag	aaa gga cga cgt aat caa	1330		
Leu Lys Val Thr Gln Glu Pro Arg Ala Lys	Lys Gly Arg Arg Asn Gln			
370	375	380	385	
agt gtg gag ccc aaa aag gaa gaa cca gag	cct gaa aca gaa gca gta	1378		
Ser Val Glu Pro Lys Lys Glu Glu Pro Glu	Pro Glu Thr Glu Ala Val			
386	391	396	401	
agt tct agc cag gaa ata ccc acg atg cct	cag ccc atc gaa aaa gtc	1426		
Ser Ser Ser Gln Glu Ile Pro Thr Met Pro	Gln Pro Ile Glu Lys Val			
402	407	412	417	
tcc gtg tca act cag aca aag aag tta agt	gcc tct tca cca aga atg	1474		
Ser Val Ser Thr Gln Thr Lys Lys Leu Ser	Ala Ser Ser Pro Arg Met			
418	423	428	433	
ctg cat cgg agc acc cag acc aca aac gac	ggc gtg tgt cag agc atg	1522		
Leu His Arg Ser Thr Gln Thr Thr Asn Asp	Gly Val Cys Gln Ser Met			
434	439	444	449	
tgc cat gac aaa tac acc aag atc ttc aat	gac ttc aaa gac cgg atg	1570		
Cys His Asp Lys Tyr Thr Lys Ile Phe Asn	Asp Phe Lys Asp Arg Met			
450	455	460	465	
aag tcg gac cac aag cgg gag aca gag cgt	gtt gtc cga gaa gct ctg	1618		
Lys Ser Asp His Lys Arg Glu Thr Glu Arg	Val Val Arg Glu Ala Leu			
466	471	476	481	
gag aag ctg cgt tct gaa atg gaa gaa gaa	aag aga caa gct gta aat	1666		
Glu Lys Leu Arg Ser Glu Met Glu Glu Glu	Lys Arg Gln Ala Val Asn			
482	487	492	497	

aaa gct gta gcc aac atg cag ggt gag atg gac aga aaa tgt aag caa	1714
Lys Ala Val Ala Asn Met Gln Gly Glu Met Asp Arg Lys Cys Lys Gln	
498 503 508 513	
gta aag gaa aag tgt aag gag gaa ttt gta gaa gaa atc aag aag ctg	1762
Val Lys Glu Lys Cys Lys Glu Glu Phe Val Glu Glu Ile Lys Lys Leu	
514 519 524 529	
gca aca cag cac aag caa ctg att tct cag acc aag aag aag cag tgg	1810
Ala Thr Gln His Lys Gln Leu Ile Ser Gln Thr Lys Lys Lys Gln Trp	
530 535 540 545	
tgc tac aac tgt gag gag gag gcc atg tac cac tgc tgc tgg aac aca	1858
Cys Tyr Asn Cys Glu Glu Glu Ala Met Tyr His Cys Cys Trp Asn Thr	
546 551 556 561	
tcc tac tgc tcc atc aag tgc cag cag gag cac tgg cac gcg gag cac	1906
Ser Tyr Cys Ser Ile Lys Cys Gln Gln Glu His Trp His Ala Glu His	
562 567 572 577	
aag cgc acc tgc cgc cgg aaa aga tga agctg gcccttcccg gagtcacccc	1958
Lys Arg Thr Cys Arg Arg Lys Arg *	
578 583	
gatgattact cttttcagac acagcgggtt ttgtttccaa gaagccaaaa ttgttttagaa	2018
tttgcttccc attttgcacc agccttttaa cacttttcgt gaagaaattt tgcacagtag	2078
tttaaattct ttgttaatgc tctccgaag tttttcaggg ggtaaaagta acatcagtgg	2138
aggggtattat tttaaataaa ttttaattga gaatttggtg cattttcagc aaatttttaa	2198
acatttttag gttttacaga gattttaacc tttaaacaac agatctttaaa aaaacagggtg	2258
aatacaagtg agtttaacaa agaaacattt agaatagatc tgaatgtaag aactacagaa	2318
ctgtttcaga aataaaacat actaccttga tgtgacattt ttttcttaac cttgttgagc	2378
tggttttggt cagcttaatt tactgttcaa aggcattatc tgttggtcac accagtgggt	2438
atatgattga atttagggaa cagggttgac acagcagggc tagtctgca tttttttct	2498
taaatatttc ccaattgtgt ttttcattat ttcttttcaa tatataactt ttataacaaa	2558
ttattagctt tgatcttgta gtttaaaatt gcaggggaact ggggtaattct ttactgagc	2618
tggtatcttag agaaaatgaa tatttaaatt ttaaagtttg cacatttcat ctttgccta	2678
acatgagtgc ttgtaacaaa ataaacaaca aaaacaaagc caaaaactac ctttatccat	2738
atgtgaaatt atagatgagg catacgaatt tgtttaatgc ttccctccc ttcccacata	2798
tcattctact gcctattatc tgggtgcacc tcattgtatc taagttaata ctaaaagaag	2858
agaaagcact taagtttcac agaagccgtt atgtttgtag taatgggtca ttgcctacta	2918

atgaactcca tcaactgtaca cagaatgaag aataatgcat gttaattttc ttgtattaaa 2978
gatgccgtga tttgtaaaaa gtctgtatatt tgcggaatgt ctggattaag aagcattacc 3038
aataggaatg gatcgatagt tgaataatga ttttttatac atagatatat aaaatacagc 3098
caggaaaact taaattactt ttctttttaa atatctcaca atttatgtgg tattttttaa 3158
gactgatctt agaccaagtc aaattcccat ttatcattt 3197

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<211> 3035
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (176)..(1771)

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atacaaaagc tatccagcat ctttgggcag ccattgagat tatacggaac cagaagcaga 120
ttgccaacat tgaccgtatt acaaaaatgtg aaacaactac attattcttg aacct atg 178
Met
1
gtg att ttt aca tca tta cac aga tat gtc att ttc att agt tgt atc 226
Val Ile Phe Thr Ser Leu His Arg Tyr Val Ile Phe Ile Ser Cys Ile
2 7 12 17
att gtt ata aac tgg tat atg tct cga gtc cac ggt atg cac cct aaa 274
Ile Val Ile Asn Trp Tyr Met Ser Arg Val His Gly Met His Pro Lys
18 23 28 33
gag acc acc cgt cag ctg agc tta gct gtg aaa gat ggt ctt att gtc 322
Glu Thr Thr Arg Gln Leu Ser Leu Ala Val Lys Asp Gly Leu Ile Val
34 39 44 49
gaa act cta aca gtg ggc tgc aaa ggt tca aaa gct ggt att gaa caa 370
Glu Thr Leu Thr Val Gly Cys Lys Gly Ser Lys Ala Gly Ile Glu Gln
50 55 60 65
gaa gga tat tgg ttg cca gga gat gag att agc att aag aag aag aat 418
Glu Gly Tyr Trp Leu Pro Gly Asp Glu Ile Ser Ile Lys Lys Lys Asn
66 71 76 81
aca aac aaa cag gag atg ggc aca tac ctc aga ttc att gtc tcc cgc 466
Thr Asn Lys Gln Glu Met Gly Thr Tyr Leu Arg Phe Ile Val Ser Arg
82 87 92 97
/

atg aag gag agg gct ata gat ctt aat aaa aag ggg aag gac aat aaa 514
Met Lys Glu Arg Ala Ile Asp Leu Asn Lys Lys Gly Lys Asp Asn Lys

98	103	108	113	
cac ccg atg tac agg	agg ctg gtg cac tca	gct gtg gac gtt ccc	acc	562
His Pro Met Tyr Arg	Arg Leu Val His Ser	Ala Val Asp Val Pro	Thr	
114	119	124	129	
att caa gag aaa gtg	aat gaa ggg aaa tac	cga agt tat gaa gag	ttc	610
Ile Gln Glu Lys Val	Asn Glu Gly Lys Tyr	Arg Ser Tyr Glu Glu	Phe	
130	135	140	145	
aaa gct gat gcc caa	ttg ctt ctc cac aat	acc gtg att ttc tat	gga	658
Lys Ala Asp Ala Gln	Leu Leu Leu His Asn	Thr Val Ile Phe Tyr	Gly	
146	151	156	161	
gca gac agt gag caa	gct gac att gcg agg	atg cta tat aaa gac	aca	706
Ala Asp Ser Glu Gln	Ala Asp Ile Ala Arg	Met Leu Tyr Lys Asp	Thr	
162	167	172	177	
tgt cat gag ctg gat	gaa ctg cag ctt tgc	aag aat tgc ttt tac	ttg	754
Cys His Glu Leu Asp	Glu Leu Gln Leu Cys	Lys Asn Cys Phe Tyr	Leu	
178	183	188	193	
tca aat gct cgt cct	gac aac tgg ttc tgt	tat cct tgt ata cct	aat	802
Ser Asn Ala Arg Pro	Asp Asn Trp Phe Cys	Tyr Pro Cys Ile Pro	Asn	
194	199	204	209	
cat gag ctg gtt tgg	gct aaa atg aaa ggt	ttt ggg ttt tgg cca	gcc	850
His Glu Leu Val Trp	Ala Lys Met Lys Gly	Phe Gly Phe Trp Pro	Ala	
210	215	220	225	
aaa gtc atg cag aaa	gaa gac aat caa gtc	gac gtt cgc ttc ttt	ggc	898
Lys Val Met Gln Lys	Glu Asp Asn Gln Val	Asp Val Arg Phe Phe	Gly	
226	231	236	241	
cac cac cac cag agg	gcc tgg att cct tct	gaa aac att caa gat	atc	946
His His His Gln Arg	Ala Trp Ile Pro Ser	Glu Asn Ile Gln Asp	Ile	
242	247	252	257	
aca gtc aac att cat	cgg ctg cac gtg aag	cgc agt atg ggt tgg	aaa	994
Thr Val Asn Ile His	Arg Leu His Val Lys	Arg Ser Met Gly Trp	Lys	
258	263	268	273	
aag gcc tgt gat gag	ctg gag ctg cat cag	cgt ttc cta cga gaa	ggg	1042
Lys Ala Cys Asp Glu	Leu Glu Leu His Gln	Arg Phe Leu Arg Glu	Gly	
274	279	284	289	
aga ttt tgg aaa tct	aag aat gag gac cga	ggg gag gaa gag gca	gaa	1090
Arg Phe Trp Lys Ser	Lys Asn Glu Asp Arg	Gly Glu Glu Glu Ala	Glu	
290	295	300	305	
tcc agt atc tcc tcc	acc agt aat gag cag	cta aag gtc act caa	gaa	1138
Ser Ser Ile Ser Ser	Thr Ser Asn Glu Gln	Leu Lys Val Thr Gln	Glu	
306	311	316	321	
cca aga gca aag aaa	gga cga cgt aat caa	agt gtg gag ccc aaa	aag	1186
Pro Arg Ala Lys Lys	Gly Arg Arg Asn Gln	Ser Val Glu Pro Lys	Lys	
322	327	332	337	

gaa gaa cca gag cct gaa aca gaa gca gta agt tct agc cag gaa ata	1234
Glu Glu Pro Glu Pro Glu Thr Glu Ala Val Ser Ser Ser Gln Glu Ile	
338 343 348 353	
ccc acg atg cct cag ccc atc gaa aaa gtc tcc gtg tca act cag aca	1282
Pro Thr Met Pro Gln Pro Ile Glu Lys Val Ser Val Ser Thr Gln Thr	
354 359 364 369	
aag aag tta agt gcc tct tca cca aga atg ctg cat cgg agc acc cag	1330
Lys Lys Leu Ser Ala Ser Ser Pro Arg Met Leu His Arg Ser Thr Gln	
370 375 380 385	
acc aca aac gac ggc gtg tgt cag agc atg tgc cat gac aaa tac acc	1378
Thr Thr Asn Asp Gly Val Cys Gln Ser Met Cys His Asp Lys Tyr Thr	
386 391 396 401	
aag atc ttc aat gac ttc aaa gac cgg atg aag tcg gac cac aag cgg	1426
Lys Ile Phe Asn Asp Phe Lys Asp Arg Met Lys Ser Asp His Lys Arg	
402 407 412 417	
gag aca gag cgt gtt gtc cga gaa gct ctg gag aag ctg cgt tct gaa	1474
Glu Thr Glu Arg Val Val Arg Glu Ala Leu Glu Lys Leu Arg Ser Glu	
418 423 428 433	
atg gaa gaa gaa aag aga caa gct gta aat aaa gct gta gcc aac atg	1522
Met Glu Glu Glu Lys Arg Gln Ala Val Asn Lys Ala Val Ala Asn Met	
434 439 444 449	
cag ggt gag atg gac aga aaa tgt aag caa gta aag gaa aag tgt aag	1570
Gln Gly Glu Met Asp Arg Lys Cys Lys Gln Val Lys Glu Lys Cys Lys	
450 455 460 465	
gag gaa ttt gta gaa gaa atc aag aag ctg gca aca cag cac aag caa	1618
Glu Glu Phe Val Glu Glu Ile Lys Lys Leu Ala Thr Gln His Lys Gln	
466 471 476 481	
ctg att tct cag acc aag aag aag cag tgg tgc tac aac tgt gag gag	1666
Leu Ile Ser Gln Thr Lys Lys Lys Gln Trp Cys Tyr Asn Cys Glu Glu	
482 487 492 497	
gag gcc atg tac cac tgc tgc tgg aac aca tcc tac tgc tcc atc aag	1714
Glu Ala Met Tyr His Cys Cys Trp Asn Thr Ser Tyr Cys Ser Ile Lys	
498 503 508 513	
tgc cag cag gag cac tgg cac gcg gag cac aag cgc acc tgc cgc cgg	1762
Cys Gln Gln Glu His Trp His Ala Glu His Lys Arg Thr Cys Arg Arg	
514 519 524 529	
aaa aga tga agctggc ccttcccgga gtcaccccgga tgattactct tttcagacac	1818
Lys Arg *	
530	
agcgggttttt gtttccaaga agccaaaatt gtttagaatt tgcttcccat tttgcaccag	1878
cctttaaaca cttttcgtga agaaattttg cacagtagtt taaatctttt gttaatgctc	1938

ctccgaagtt tttcaggggg taaaagtaac atcagtggag ggtattat	1998
tttaattgaga atttgggtgca ttttcagcaa attttaaaac atttttaggt tttacagaga	2058
ttttaacctt taaacaacag atctttaaaa aacagggtgaa tacaagtgag tttaacaaag	2118
aaacatttag aatagatctg aatgtaagaa ctacagaact gtttcagaaa taaaacatac	2178
taccttgatg tgacattttt ttcttaacct tgttgagctg gttttgttca gcttaattta	2238
ctgttcaaag gcattatctg ttggtcacac cagtgggtat atgattgaat ttagggaaca	2298
gggttgacac agcagggcta gtcctgcata ttttttctta aatatttccc aattgtgttt	2358
ttcattat	2418
tttttcaata tataactttt ataacaaatt attagctttg atctttagt	2478
ttaaaattgc agggaactgg ggtaatcttt tactgagctg gatcttagag aaaatgaata	2538
tttaaatttt aaagtttgca catttcatct ttgtcctaac atgagtgtt gtaacaaaat	2598
aaacaacaaa aacaaagcca aaaactacct ttatccatat gtgaaattat agatgaggca	2658
tacgaatttg tttaatgtct ccttccctt cccacatata atctcactgc ctattatctg	2718
gtgtcacctc atgtatcgta agttaatact aaaagaagag aaagcactta agtttcacag	2778
aagccgttat gttttagta atgggtcatt gcctactaat gaactccatc actgtacaca	2838
gaatgaagaa taatgcatgt taattttctt gtattaaaga tgccgtgatt tgtaaaaagt	2898
ctgtattttg cggaatgtct ggattaagaa gcattaccaa taggaatgga tcgatagttg	2958
aataatgatt ttttatacat agatatataa aatacagcca ggaaaactta aattactttt	3018
cttttaaaat atctcacaat ttatgtggta tttttaaaga ctgatcttag accaagtcaa	3035
attcccattt atcattt	

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 <211> 1684
 <212> DNA
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<220>
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 <222> (314)..(1357)

<400> 287	
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tgctgcctt gctccaggct ccacctgcgc cgccgatcgc ccgggtatcg cgggggccca	120
ggccagctga gtccgttttc cgcgcggggg tggcgcccct ccaaccgtcc taacgcggg	180

Leu Asp Val Asp Met Val Phe Arg Asn Pro Trp Gly Pro Glu Thr Leu	
205 210 215 220	
gga gac ctg gtg gct gcc att cac cca agc tac tac gcc gtt ccc cgc	1021
Gly Asp Leu Val Ala Ala Ile His Pro Ser Tyr Tyr Ala Val Pro Arg	
221 226 231 236	
cag cag ttc ccc tat gag cgc agg cgt gtt tcc act gcc ttt gtg gca	1069
Gln Gln Phe Pro Tyr Glu Arg Arg Arg Val Ser Thr Ala Phe Val Ala	
237 242 247 252	
gac agc gaa ggg gac ttc tat tat ggt ggg gca gtc ttc ggg ggg cag	1117
Asp Ser Glu Gly Asp Phe Tyr Tyr Gly Gly Ala Val Phe Gly Gly Gln	
253 258 263 268	
gtg gcc agg gta tat gag ttt act agg ggc tgc cac atg gcc atc ctg	1165
Val Ala Arg Val Tyr Glu Phe Thr Arg Gly Cys His Met Ala Ile Leu	
269 274 279 284	
gcg gac aag gcc aat ggc atc atg gct gcc tgg cgg gag gaa agc cac	1213
Ala Asp Lys Ala Asn Gly Ile Met Ala Ala Trp Arg Glu Glu Ser His	
285 290 295 300	
ctg aac cgt cac ttc atc tca aac aag cgg tcc aag gtg ctg tcc ccc	1261
Leu Asn Arg His Phe Ile Ser Asn Lys Pro Ser Lys Val Leu Ser Pro	
301 306 311 316	
gag tac ctc tgg gac gac agg aag ccc cag cca ccc agc ctg aag ctg	1309
Glu Tyr Leu Trp Asp Asp Arg Lys Pro Gln Pro Pro Ser Leu Lys Leu	
317 322 327 332	
atc cgc ttt tct aca ctg gac aag gat atc agc tgc ctg agg agc tga	1357
Ile Arg Phe Ser Thr Leu Asp Lys Asp Ile Ser Cys Leu Arg Ser *	
333 338 343 348	
ccacggagct gggggttgcc atggatgggg acccaaagac ctgcagccac cagtgttca	1417
ctagcgtgca gaccagccct gtcccgccct cctgtcagtc aggcgaattc aaccggaaaa	1477
gggacgtgga aaggccactg tgaactgcag agggctgtgc acacagtagc acacaggatc	1537
tcacagtaac gcggcatggg aacagtgaga cagggggagg ggaggcgcag ttacaaaggc	1597
agggcccggc aggccttgcca cgttctgcag ccgtgccttt gcggggcagg ctctgaagcc	1657
tcagcccgcac tcagagtgcc tgaaccg	1684

<210> 288
 <211> 1535
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (290) .. (1036)

<400> 288

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ggagactttt	cgttttcatt	tacgctgcgg	aaactgacgt	ttttgcctaa	caccccatgt	180
aatgtaaacg	tataggcttg	agtacgtgtc	aggccgcatg	tgtagtgaac	cctaaagctt	240
tcctaattgt	agttagcatc	gtccctaagc	ggaacgattt	tccgtgaac	atg att	295
					Met Ile	
					1	
tgt act ttt cta cga gcc gta cag tat acg gag aag ctg cac agg tcc	343					
Cys Thr Phe Leu Arg Ala Val Gln Tyr Thr Glu Lys Leu His Arg Ser						
3 8 13 18						
tcg gca aag cga ttg ctt ttg cca tac atc gtg ctt aac aaa gcg tgc	391					
Ser Ala Lys Arg Leu Leu Leu Pro Tyr Ile Val Leu Asn Lys Ala Cys						
19 24 29 34						
ttg aag act gag ccc agt ttg aga tgt ggg ctt caa tat caa aag aaa	439					
Leu Lys Thr Glu Pro Ser Leu Arg Cys Gly Leu Gln Tyr Gln Lys Lys						
35 40 45 50						
acg ctg cga cct aga tgt att ctt gga gtc acc cag aaa acc atc tgg	487					
Thr Leu Arg Pro Arg Cys Ile Leu Gly Val Thr Gln Lys Thr Ile Trp						
51 56 61 66						
acg cag gga ccg agc ccc cga aaa gca aag gag gat agc agc acc caa	535					
Thr Gln Gly Pro Ser Pro Arg Lys Ala Lys Glu Asp Ser Ser Thr Gln						
67 72 77 82						
gtg tct gtg cac agg agt cag aga ggg gga acc gcc gtt cca aca tca	583					
Val Ser Val His Arg Ser Gln Arg Gly Gly Thr Ala Val Pro Thr Ser						
83 88 93 98						
caa tta gtg aat gaa gcc gga aga gat ttt acc tat tta ata gtg gtg	631					
Gln Leu Val Asn Glu Ala Gly Arg Asp Phe Thr Tyr Leu Ile Val Val						
99 104 109 114						
ctt ttt gga atc agc att aca ggt ggc ttg ttt tac acg att ttc aaa	679					
Leu Phe Gly Ile Ser Ile Thr Gly Gly Leu Phe Tyr Thr Ile Phe Lys						
115 120 125 130						
gaa ctt ttt tct tca tcc agt cct agc aag ata tat ggg aga gcc tta	727					
Glu Leu Phe Ser Ser Ser Pro Ser Lys Ile Tyr Gly Arg Ala Leu						
131 136 141 146						
gaa aaa tgc aga tca cat cct gag gtg atc ggt gtc ttt ggt gag tct	775					
Glu Lys Cys Arg Ser His Pro Glu Val Ile Gly Val Phe Gly Glu Ser						
147 152 157 162						
gtt aaa ggc tat ggg gag gtg aca agg cgg ggt cgc cgg cag cat gtc	823					
Val Lys Gly Tyr Gly Glu Val Thr Arg Arg Gly Arg Arg Gln His Val						

163	168	173	178	
agg ttc act gaa tat gta aaa gat ggg ctg aaa cac acg tgt gtg aaa				871
Arg Phe Thr Glu Tyr Val Lys Asp Gly Leu Lys His Thr Cys Val Lys				
179	184	189	194	
ttc tac att gag ggc tct gag cca ggg aag caa gga acg gtg tat gcg				919
Phe Tyr Ile Glu Gly Ser Glu Pro Gly Lys Gln Gly Thr Val Tyr Ala				
195	200	205	210	
caa gtg aaa gag aac cca gga agt ggt gaa tat gat ttt cga tat ata				967
Gln Val Lys Glu Asn Pro Gly Ser Gly Glu Tyr Asp Phe Arg Tyr Ile				
211	216	221	226	
ttt gta gaa att gaa tct tat cct aga aga act att atc att gaa gat				1015
Phe Val Glu Ile Glu Ser Tyr Pro Arg Arg Thr Ile Ile Ile Glu Asp				
227	232	237	242	
aat cga tcc caa gat gat taa aa taatcaagca agcagggtttc tgatggatgt				1068
Asn Arg Ser Gln Asp Asp *				
243	248			
tgaatggcgt ggactcgcta ctccgttctt cacagctgcc ttccagaatg tgttcaaaag				1128
aaagacaaga aggagtgtat ggcttataaa gtgaatctaa tacagtattt gttgcattta				1188
aacaaactag acattttctt acggaaaaat tatgaaatac agcatatttt atgttctccc				1248
attgactcaa tcatgacaat atttctgctt taacaccatc ttctgtgatt agaaatgttt				1308
gttattggaa atgttacacc atgtaaataa aggaaataga ttttagtatt gtattcattt				1368
tatattatag aactgcataa tgtctgcaga ataaaattaa aactaacaaa tatgtcatta				1428
gcagctgccc tccgcatact ttggaatctg acttgagata agcatgtgaa aatgggtgag				1488
ggccataggg aaccagatgg taaatacatt cttcaaaatt gaaaaaa				1535

<210> 289
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (197)..(4471)

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ttgaacaagc gtcacttgac aagcctatat aatcgggaga acagatccca ttccaatcgt	180

tgccaagtat gatgtc	atg ggc atg ggt cgc atg gaa atg gag ctt gat	229
	Met Gly Met Gly Arg Met Glu Met Glu Leu Asp	
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tat gct gaa gat gct acc gaa cgg cgc cgt gtc cta gaa gta gaa aaa	277	
Tyr Ala Glu Asp Ala Thr Glu Arg Arg Arg Val Leu Glu Val Glu Lys		
12 17 22 27		
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Glu Asp Thr Glu Glu Leu Arg Gln Lys Tyr Lys Asp Tyr Val Asp Lys		
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Glu Lys Ala Ile Ala Lys Ala Leu Glu Asp Leu Arg Ala Asn Phe Tyr		
44 49 54 59		
tgt gaa ctg tgt gat aag caa tat cag aaa cat cag gaa ttt gat aac	421	
Cys Glu Leu Cys Asp Lys Gln Tyr Gln Lys His Gln Glu Phe Asp Asn		
60 65 70 75		
cat atc aac tcc tat gat cat gca cac aag cag aga tta aaa gat ctg	469	
His Ile Asn Ser Tyr Asp His Ala His Lys Gln Arg Leu Lys Asp Leu		
76 81 86 91		
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Lys Gln Arg Glu Phe Ala Arg Asn Val Ser Ser Arg Ser Arg Lys Asp		
92 97 102 107		
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Ile Thr Asn Thr Thr Gly Leu Ala Gln Ala Pro Gly Leu Ala Ser Gln		
188 193 198 203		
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Gly Ile Ser Phe Gly Ile Lys Asn Asn Leu Gly Thr Pro Leu Gln Lys		
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Ser Ile Ala Ser Val	Phe Lys Asp His Ala Glu Glu Gly Thr Ser Glu		
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gat gga aca aaa ccc	gat gag aag agt tct gac caa gga ctg cag aag		997
Asp Gly Thr Lys Pro	Asp Glu Lys Ser Ser Asp Gln Gly Leu Gln Lys		
252	257	262	267
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Val Gly Asp Ser Asp	Gly Ser Ser Asn Leu Asp Gly Lys Lys Glu Asp		
268	273	278	283
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Glu Asp Pro Gln Asp	Gly Gly Ser Leu Ala Ser Thr Leu Ser Lys Leu		
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Lys Arg Met Lys Arg	Glu Glu Gly Ala Gly Ala Thr Glu Pro Glu Tyr		
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Tyr His Tyr Ile Pro	Pro Ala His Cys Lys Val Lys Pro Asn Phe Pro		
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Phe Leu Leu Phe Met	Arg Ala Ser Glu Gln Met Asp Gly Asp Asn Thr		
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Thr His Pro Lys Asn	Ala Pro Glu Ser Lys Lys Gly Ser Ser Pro Lys		
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Pro Lys Ser Cys Ile	Lys Ala Ala Ala Ser Gln Gly Ala Glu Lys Thr		
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Val Ser Glu Val Ser	Glu Gln Pro Lys Glu Thr Ser Met Thr Glu Pro		
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Ser Glu Pro Gly Ser	Lys Ala Glu Ala Lys Lys Ala Leu Gly Gly Asp		
396	401	406	411
gta agt gat cag agt	tta gaa agt cat agt cag aag gtt tca gag acc		1477
Val Ser Asp Gln Ser	Leu Glu Ser His Ser Gln Lys Val Ser Glu Thr		
412	417	422	427
caa atg tgt gag tcc	aac tct tct aaa gaa acc tct ctg gcc acc cca		1525
Gln Met Cys Glu Ser	Asn Ser Ser Lys Glu Thr Ser Leu Ala Thr Pro		
428	433	438	443
gca ggg aaa gaa agc	caa gaa gga ccc aaa cat cct act ggt ccc ttc		1573
Ala Gly Lys Glu Ser	Gln Glu Gly Pro Lys His Pro Thr Gly Pro Phe		

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Phe Pro Val Leu Ser	Lys Asp Glu Ser Thr	Ala Leu Gln Trp Pro Ser		
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Asn Pro Leu Tyr Phe	Asp Phe Lys Leu Ser	Arg Asn Lys Asp Ala Arg		
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act aaa gga aca gaa	aaa cca aag gat ata	gga agc tcc tca aag gac	1765	
Thr Lys Gly Thr Glu	Lys Pro Lys Asp Ile	Gly Ser Ser Ser Lys Asp		
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cat ctc caa ggc cta	gat cct ggt gag cca	aat aaa agc aag gaa gtg	1813	
His Leu Gln Gly Leu	Asp Pro Gly Glu Pro	Asn Lys Ser Lys Glu Val		
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ggc gga gag aaa ata	gta cgt tcc tca gga	ggc aga atg gac gca cct	1861	
Gly Gly Glu Lys Ile	Val Arg Ser Ser Gly	Gly Arg Met Asp Ala Pro		
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Ala Ser Gly Ser Ala	Cys Ser Gly Leu Asn	Lys Gln Glu Pro Gly Gly		
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Ser His Gly Ser Glu	Thr Glu Asp Thr Gly	Arg Ser Leu Pro Ser Lys		
572	577	582	587	
aaa gaa cga tct ggg	aag tcc cac cgg cac	aaa aag aaa aag aag cac	2005	
Lys Glu Arg Ser Gly	Lys Ser His Arg His	Lys Lys Lys Lys Lys His		
588	593	598	603	
aaa aaa tcc agc aaa	cac aaa cgt aaa cac	aag gct gac aca gaa gag	2053	
Lys Lys Ser Ser Lys	His Lys Arg Lys His	Lys Ala Asp Thr Glu Glu		
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cgg agc caa ccc agt agt gga gat gag gat agt gat gat gct tcc tca Arg Ser Gln Pro Ser Ser Gly Asp Glu Asp Ser Asp Asp Ala Ser Ser 732 737 742 747	2437
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Leu Thr Thr Glu Asn Arg Phe His Ser Leu Pro Phe Ser Leu Thr Lys	
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Pro Pro Leu Ala Met Pro Pro Gly Asn Ser His Gly Leu Glu Val Gly	
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Arg Tyr Phe Thr Cys Ala Leu Lys Lys Ala Leu Phe Val Lys Leu Lys				
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Ile Tyr Gly Tyr Val Cys Ala Thr Lys Ile Met Lys Leu Arg Lys Ile				
379	384	389	394	
ctt gaa aag gtg gag gct gca tca gga ttt acc tct gaa gaa aaa gat				1310
Leu Glu Lys Val Glu Ala Ala Ser Gly Phe Thr Ser Glu Glu Lys Asp				
395	400	405	410	
cct gag gaa ttc ttg aat att ctg ttt cat cat att tta agg gta gaa				1358
Pro Glu Glu Phe Leu Asn Ile Leu Phe His His Ile Leu Arg Val Glu				
411	416	421	426	
cct ttg cta aaa ata aga tca gca ggt caa aag gta caa gat tgt tac				1406
Pro Leu Leu Lys Ile Arg Ser Ala Gly Gln Lys Val Gln Asp Cys Tyr				
427	432	437	442	
ttc tat caa att ttt atg gaa aaa aat gag aaa gtt ggc gtt ccc aca				1454
Phe Tyr Gln Ile Phe Met Glu Lys Asn Glu Lys Val Gly Val Pro Thr				
443	448	453	458	
att cag cag ttg tta gaa tgg tct ttt atc aac agt aac ctg aaa ttt				1502
Ile Gln Gln Leu Leu Glu Trp Ser Phe Ile Asn Ser Asn Leu Lys Phe				
459	464	469	474	

gca gag gca cca tca tgt ctg att att cag atg cct cga ttt gga aaa Ala Glu Ala Pro Ser Cys Leu Ile Ile Gln Met Pro Arg Phe Gly Lys 475 480 485 490	1550
gac ttt aaa cta ttt aaa aaa att ttt cct tct ctg gaa tta aat ata Asp Phe Lys Leu Phe Lys Lys Ile Phe Pro Ser Leu Glu Leu Asn Ile 491 496 501 506	1598
aca gat tta ctt gaa gac act ccc aga cag tgc cgg ata tgt gga ggg Thr Asp Leu Leu Glu Asp Thr Pro Arg Gln Cys Arg Ile Cys Gly Gly 507 512 517 522	1646
ctt gca atg tat gag tgt aga gaa tgc tac gac gat ccg gac atc tca Leu Ala Met Tyr Glu Cys Arg Glu Cys Tyr Asp Asp Pro Asp Ile Ser 523 528 533 538	1694
gct gga aaa atc aag cag ttt tgt aaa acc tgc aac act caa gtc cac Ala Gly Lys Ile Lys Gln Phe Cys Lys Thr Cys Asn Thr Gln Val His 539 544 549 554	1742
ctt cat ccg aag agg ctg aat cat aaa tat aac cca gtg tca ctt ccc Leu His Pro Lys Arg Leu Asn His Lys Tyr Asn Pro Val Ser Leu Pro 555 560 565 570	1790
aaa gac tta ccc gac tgg gac tgg aga cac ggc tgc atc cct tgc cag Lys Asp Leu Pro Asp Trp Asp Trp Arg His Gly Cys Ile Pro Cys Gln 571 576 581 586	1838
aat atg gag tta ttt gct gtt ctc tgc ata gaa aca agc cac tat gtt Asn Met Glu Leu Phe Ala Val Leu Cys Ile Glu Thr Ser His Tyr Val 587 592 597 602	1886
gct ttt gtg aag tat ggg aag gac gat tct gcc tgg ctc ttc ttt gac Ala Phe Val Lys Tyr Gly Lys Asp Asp Ser Ala Trp Leu Phe Phe Asp 603 608 613 618	1934
agc atg gcc gat cgg gat ggt ggt cag aat ggc ttc aac att cct caa Ser Met Ala Asp Arg Asp Gly Gly Gln Asn Gly Phe Asn Ile Pro Gln 619 624 629 634	1982
gtc acc cca tgc cca gaa gta gga gag tac ttg aag atg tct ctg gaa Val Thr Pro Cys Pro Glu Val Gly Glu Tyr Leu Lys Met Ser Leu Glu 635 640 645 650	2030
gac ctg cat tcc ttg gac tcc agg aga atc caa ggc tgt gca cga aga Asp Leu His Ser Leu Asp Ser Arg Arg Ile Gln Gly Cys Ala Arg Arg 651 656 661 666	2078
ctg ctt tgt gat gca tat atg tgc atg tac cag agt cca aca atg agt Leu Leu Cys Asp Ala Tyr Met Cys Met Tyr Gln Ser Pro Thr Met Ser 667 672 677 682	2126
ttg tac aaa taa ctg ggggtcatcgg gaaaggcaaa gaaactgaag gcagagtcct Leu Tyr Lys */ 683	2181

aacgttgcac cttattcgag ctggcagttc tgttcacgtc cattgccggc aatggatgtc 2241
 tttgtggtga tgatccttca gaaaaggatg cctctgttta aaaacaaatt gcttttgtgt 2301
 ccctgaagta ttttaataaga agcattttgc actctagaaa gtatgtttgt gttggttttt 2361
 taagaagtct aaatgaagtt attaatacct gaagctttaa gttaagtga ttgatcatat 2421
 gatatttttg gaagcataca attttaattg tggaagttaa aagcctcttt tagtccattg 2481
 agaatgtaaa taaatgtgtc ttctttatgg aaaaaaaaaa aa 2523

<210> 291
 <211> 467
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (223) .. (465)

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 cttcagctca agtttgctga gcttttgttt catttggtgaa tacttcttgc tggaagtccc 120
 tcacccagag accagtgtc ccaacggcag agcagcgggg gagataaaga actggtgaca 180
 cgtgggtgta cattcagcac agctgtggtg tcccccaagtg cc atg acc cag gag 234
 Met Thr Gln Glu
 1
 cca ttc aga gag gag ctg gcc tat gac cgg atg ccc acg ctg gag cgg 282
 Pro Phe Arg Glu Glu Leu Ala Tyr Asp Arg Met Pro Thr Leu Glu Arg
 5 10 15 20
 ggc cgg caa gac ccc gcc agc tat gcc cca gac gcg aag ccg agc gac 330
 Gly Arg Gln Asp Pro Ala Ser Tyr Ala Pro Asp Ala Lys Pro Ser Asp
 21 26 31 36
 ctg cag ctg tcg aag aga ctg ccc ccc tgc ttc agc cac aag acg tgg 378
 Leu Gln Leu Ser Lys Arg Leu Pro Pro Cys Phe Ser His Lys Thr Trp
 37 42 47 52
 gtc ttc tct gcg ctg atg gga acc tgc ctc ctg gag acc tcg ggg ttt 426
 Val Phe Ser Ala Leu Met Gly Thr Cys Leu Leu Glu Thr Ser Gly Phe
 53 58 63 68
 tct ctg aac ttg gaa acg tgt ccc ggt gtg aaa ggg taa tt 467
 Ser Leu Asn Leu Glu Thr Cys Pro Gly Val Lys Gly *
 69 74 79

<210> 292
 <211> 3570
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (162)..(2012)

<400> 292
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 atagaatgga gatggcaaag atctcttttg gcatatatgg gcctggcgaa gtaatggaat 120
 aatttctaat ttctggagaa ggcaagtgcc ctcatgccgg g atg gca gaa gat 173
 Met Ala Glu Asp
 1
 gag cct gat gct aag agc ccc aag act ggg gga agg gcc ccc cca ggt 221
 Glu Pro Asp Ala Lys Ser Pro Lys Thr Gly Gly Arg Ala Pro Pro Gly
 5 10 15 20
 ggt gct gag gct ggg gaa cct acc acc ctt ctt cag agg ctc cga ggt 269
 Gly Ala Glu Ala Gly Glu Pro Thr Thr Leu Leu Gln Arg Leu Arg Gly
 21 26 31 36
 acc att tcc aag gcc gtg cag aac aaa gta gag ggg atc ctg caa gat 317
 Thr Ile Ser Lys Ala Val Gln Asn Lys Val Glu Gly Ile Leu Gln Asp
 37 42 47 52
 gta cag aaa ttt tct gac aat gac aag ctg tat ctc tac ctt cag ctc 365
 Val Gln Lys Phe Ser Asp Asn Asp Lys Leu Tyr Leu Tyr Leu Gln Leu
 53 58 63 68
 ccc tca gga ccc acc act gga gac aaa agc tca gag cca agt aca ctg 413
 Pro Ser Gly Pro Thr Thr Gly Asp Lys Ser Ser Glu Pro Ser Thr Leu
 69 74 79 84
 agc aat gag gag tac atg tat gcc tat agg tgg atc cgc aac cac ctg 461
 Ser Asn Glu Glu Tyr Met Tyr Ala Tyr Arg Trp Ile Arg Asn His Leu
 85 90 95 100
 gaa gag cac act gac acc tgt ctg cca aag caa agt gtt tat gat gcc 509
 Glu Glu His Thr Asp Thr Cys Leu Pro Lys Gln Ser Val Tyr Asp Ala
 101 106 111 116
 tat cgg aag tac tgt gag agt ctt gcc tgt tgc cgc cca ctc agc aca 557
 Tyr Arg Lys Tyr Cys Glu Ser Leu Ala Cys Cys Arg Pro Leu Ser Thr
 117 122 127 132
 gcc aac ttt ggc aag atc atc aga gag atc ttc cct gac atc aaa gct 605
 Ala Asn Phe Gly Lys Ile Ile Arg Glu Ile Phe Pro Asp Ile Lys Ala
 133 138 143 148/
 cga agg ctt ggt ggc cgg ggc cag tcc aaa tat tgc tac agt ggc ata 653

Arg Arg Leu Gly Gly Arg Gly Gln Ser Lys Tyr Cys Tyr Ser Gly Ile	
149 154 159 164	
agg agg aag acc ttg gtg tct atg cca ccc ctg cct gga ctt gac cta	701
Arg Arg Lys Thr Leu Val Ser Met Pro Pro Leu Pro Gly Leu Asp Leu	
165 170 175 180	
aag ggt tct gag agt cca gaa atg ggc cca gaa gta acc cca gca cct	749
Lys Gly Ser Glu Ser Pro Glu Met Gly Pro Glu Val Thr Pro Ala Pro	
181 186 191 196	
cga gat gaa ctg gtg gag gca gcg tgt gcc ctg acc tgt gac tgg gca	797
Arg Asp Glu Leu Val Glu Ala Ala Cys Ala Leu Thr Cys Asp Trp Ala	
197 202 207 212	
gag cgg atc ctg aaa cgg tcc ttc agt tcc atc gtt gag gtc gcc cgc	845
Glu Arg Ile Leu Lys Arg Ser Phe Ser Ser Ile Val Glu Val Ala Arg	
213 218 223 228	
ttc ctg cta cag cag cat ctc atc tct gcc cga tct gca cat gcc cat	893
Phe Leu Leu Gln Gln His Leu Ile Ser Ala Arg Ser Ala His Ala His	
229 234 239 244	
gtg ctt aag gcc atg ggg ctt gct gaa gag gac gaa cat gca cct cgg	941
Val Leu Lys Ala Met Gly Leu Ala Glu Glu Asp Glu His Ala Pro Arg	
245 250 255 260	
gaa cgg tca tct aaa cca aag aat ggt tta gag aac cca gag ggt gga	989
Glu Arg Ser Ser Lys Pro Lys Asn Gly Leu Glu Asn Pro Glu Gly Gly	
261 266 271 276	
gcc cac aag aag cca gag aga ctg gcc cag cct cct aag gat ctg gaa	1037
Ala His Lys Lys Pro Glu Arg Leu Ala Gln Pro Pro Lys Asp Leu Glu	
277 282 287 292	
gcc cga act ggg gcc ggt cct ctc gca cgt gga gag cgg aag aag agt	1085
Ala Arg Thr Gly Ala Gly Pro Leu Ala Arg Gly Glu Arg Lys Lys Ser	
293 298 303 308	
gta gtt gag agc tcg gcc cca gga gcc aat aac ctg cag gtt aat gcc	1133
Val Val Glu Ser Ser Ala Pro Gly Ala Asn Asn Leu Gln Val Asn Ala	
309 314 319 324	
cta gtg gct cgg ctg cct ctg ctc ctt ccc cgg gcc cct cgc tca cta	1181
Leu Val Ala Arg Leu Pro Leu Leu Leu Pro Arg Ala Pro Arg Ser Leu	
325 330 335 340	
att ccg cca atc cca gtc tct cca cct att ctg gcc ccc agg ctt tct	1229
Ile Pro Pro Ile Pro Val Ser Pro Pro Ile Leu Ala Pro Arg Leu Ser	
341 346 351 356	
tca ggt gcc ctg aaa gtg gct aca ctg cct ctg tct agt agg gcc ggg	1277
Ser Gly Ala Leu Lys Val Ala Thr Leu Pro Leu Ser Ser Arg Ala Gly	
357 362 367 372	
gca ccc cca gca gct gtg ccc atc att aac atg atc tta cca act gtt	1325
Ala Pro Pro Ala Ala Val Pro Ile Ile Asn Met Ile Leu Pro Thr Val	

373	378	383	388	
cct gct ttg cct gga cct gga cct ggg cct ggg cga gct cca cct ggg				1373
Pro Ala Leu Pro Gly Pro Gly Pro Gly Pro Gly Arg Ala Pro Pro Gly				
389	394	399	404	
gga ctc act cag ccc cgg ggc aca gag aac aga gag gta ggc ata ggt				1421
Gly Leu Thr Gln Pro Arg Gly Thr Glu Asn Arg Glu Val Gly Ile Gly				
405	410	415	420	
ggt gac caa gga cca cat gac aag ggt gtc aag agg aca gct gaa gta				1469
Gly Asp Gln Gly Pro His Asp Lys Gly Val Lys Arg Thr Ala Glu Val				
421	426	431	436	
cct gtg agt gag gcc agt ggg cag gct cca cca gct aaa gca gca aag				1517
Pro Val Ser Glu Ala Ser Gly Gln Ala Pro Pro Ala Lys Ala Ala Lys				
437	442	447	452	
cag gat ata gag gat aca gca agt gat gcc aaa agg aaa cgg ggg cgc				1565
Gln Asp Ile Glu Asp Thr Ala Ser Asp Ala Lys Arg Lys Arg Gly Arg				
453	458	463	468	
cct cga aaa aag tca ggt gga agt ggg gaa agg aat tct acc cct ctc				1613
Pro Arg Lys Lys Ser Gly Gly Ser Gly Glu Arg Asn Ser Thr Pro Leu				
469	474	479	484	
aag tca gca gct gcc atg gaa tct gcc cag tcc tca agg tta cca tgg				1661
Lys Ser Ala Ala Ala Met Glu Ser Ala Gln Ser Ser Arg Leu Pro Trp				
485	490	495	500	
gag aca tgg ggc tca gga ggg gaa ggc aac tca gct gga ggg gca gag				1709
Glu Thr Trp Gly Ser Gly Gly Glu Gly Asn Ser Ala Gly Gly Ala Glu				
501	506	511	516	
agg cca ggg cca atg gga gag gct gaa aag ggg gca gta ctt gcc cag				1757
Arg Pro Gly Pro Met Gly Glu Ala Glu Lys Gly Ala Val Leu Ala Gln				
517	522	527	532	
ggt cag gga gat ggt act gtt tcc aaa gga gga agg ggc ccc ggt tcc				1805
Gly Gln Gly Asp Gly Thr Val Ser Lys Gly Gly Arg Gly Pro Gly Ser				
533	538	543	548	
cag cat acc aaa gaa gca gaa gat aaa att ccc ttg gtc ccc tca aaa				1853
Gln His Thr Lys Glu Ala Glu Asp Lys Ile Pro Leu Val Pro Ser Lys				
549	554	559	564	
gtg agt gtc atc aag ggc agc aga agc caa aag gag gct ttt cct ttg				1901
Val Ser Val Ile Lys Gly Ser Arg Ser Gln Lys Glu Ala Phe Pro Leu				
565	570	575	580	
gca aag gga gag gta gac act gca cca cag ggt aat aaa gac tta aag				1949
Ala Lys Gly Glu Val Asp Thr Ala Pro Gln Gly Asn Lys Asp Leu Lys				
581	586	591	596	
gag cat gtg ctt caa agt tcc tta tcc cag gag cat aaa gac cca aaa				1997
Glu His Val Leu Gln Ser Ser Leu Ser Gln Glu His Lys Asp Pro Lys				
597	602	607	612	

gca aca ccc cca tga tacaggtctg tggggaagag tgtttatatc cctacgttaa	2052
Ala Thr Pro Pro *	
613	
ctttgcctag tagaggccct tctttgcact tgcttctcat ttggctatc ttttcctaag	2112
gaagtcatt ctctctgta cagacagctg agtcaccag tctacttagt acctgggtgc	2172
tgctctgac cttttcagct tgataccctg ggcttttagtg taaccaataa atctgtagtg	2232
accttacctg tattccctgt gctatcctgt gggaaggtag gaatgggcta agtatgatga	2292
atgtataggt tagggatctt ttggttttta atcacagaaa acctaatca aactggctta	2352
aaataaaaag gatttattgg ttcagtgaac tagaaagtcc ataggtagtg ctggctccag	2412
gtgaagactt gaccagtag ttcagtatgt ctctaaatac cggactgact tttttctcac	2472
tgttgcatct tctgtaggac catttaagtc tgggccactt aatggctgcc agcattccta	2532
agattacact tttcccatt tatgtccaat cagaaaaaga aggcattctt gtaccagaaa	2592
tctcagcaaa agccctaata ttcacactga ttaggcctgg gtcacatgac caccctgacc	2652
aatcactgtg gccaggagga tgatacatgc taatttgctt attctatatc atggacaaca	2712
cctttgggga aaaggggtggg ggtcagcctc cccaaatca catggattcc ccaagtggaa	2772
actaggagca gggagttgct tgggtggccg ctaacaccag gctactctta ttttagcttg	2832
ctaagttgag atcagctaga cctgctttct tttctctca gtcttgcat tccctcaata	2892
caagctgtag cctctttcct cgtttctagt ctcaagaaggaggagaggga agccattctc	2952
ctctagggac tcttcagtct catttagatg atagtcctt tttttctacc tccatattag	3012
agatggagct ccttcctttt cctgtttctt aatttttgct ttctcattcc tgcttcctc	3072
tcaccctatt gccagttcca ccaactagag tgaaagactt cctagccatt tcattaaatc	3132
tattctgtat ccaccagggtg gcagcatctt gtcatactg tcaggactta ggactgcggg	3192
gttttaggtta gatgtcacgg aaaaagctag ttctgtggtc aggcggcacc aatgagaaa	3252
gaatgcagac cctccagatg taccctggg aaaagcagta aaccaactaa tatttattga	3312
agacctactt tgtcctctac atagggtagc ttctgtcagg gaatcttgggt tcttccaag	3372
aaacactgat tttctttcag ggagacttca tgtgttcatt tatttccacc acagcagatt	3432
ttaagaaatt ataatatgta atatttgata tctataaaga gtatatctaa cgtgaataaa	3492
ttatgaagca tactaatgag tacctatgac ccataacaca tatacattaa aacattttta	3552
ataccaaaaa aaaaaaaaa	3570

<210> 293
 <211> 4503
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (233) .. (2305)

<220>
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 <222> (1) ... (4503)
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<400> 293
 tccgggtcccc ctccctcaga cgcgctgctc ctgctccaga tgagggtgatg gcaacgccaa 60
 cttcggcaag atccagatcg ggatttacgt ggagatcaag cgcagtcggg atagagtctt 120
 attctgtctc ccagactgga gtgcaatggg gtgatgtcgg ttcactgcaa cctctgcctc 180
 ctgggctcaa ctgatcctcc ccgctcagcc tcccaagtag ctgggactac ag atg 235
 Met
 1
 cac acc aca tcc ggc cga ata cat caa gca atg gta aca tct tta aat 283
 His Thr Thr Ser Gly Arg Ile His Gln Ala Met Val Thr Ser Leu Asn
 2 7 12 17
 gaa gat aat gaa agt gta act gtt gaa tgg ata gaa aat gga gat aca 331
 Glu Asp Asn Glu Ser Val Thr Val Glu Trp Ile Glu Asn Gly Asp Thr
 18 23 28 33
 aaa ggc aaa gag att gac ctg gag agc atc ttt tca ctt aac cct gac 379
 Lys Gly Lys Glu Ile Asp Leu Glu Ser Ile Phe Ser Leu Asn Pro Asp
 34 39 44 49
 ctt gtt cct gat gaa gaa att gaa ccc agt cca gaa aca cct cca cct 427
 Leu Val Pro Asp Glu Glu Ile Glu Pro Ser Pro Glu Thr Pro Pro Pro
 50 55 60 65
 cca gca tcc tca gcc aaa gta aac aaa att gta aag aat cga cgg act 475
 Pro Ala Ser Ser Ala Lys Val Asn Lys Ile Val Lys Asn Arg Arg Thr
 66 71 76 81
 gta gct tct att aag aat gac cct cct tca aga gat aat aga gtg gtt 523
 Val Ala Ser Ile Lys Asn Asp Pro Pro Ser Arg Asp Asn Arg Val Val
 82 87 92 97
 ggt tca gca cgt gca cgg ccc agt caa ttt cct gaa cag tct tcc tct 571
 Gly Ser Ala Arg Ala Arg Pro Ser Gln Phe Pro Glu Gln Ser Ser Ser
 98 103 108 113
 gca caa cag aat ggt agt gtt tca gat ata tct cca gtt caa gct gca 619

Ala Gln Gln Asn Gly Ser Val Ser Asp Ile Ser Pro Val Gln Ala Ala	
114 119 124 129	
aaa aag gaa ttt gga ccc cct tca cgt aga aaa tct aat tgt gtg aaa	667
Lys Lys Glu Phe Gly Pro Pro Ser Arg Arg Lys Ser Asn Cys Val Lys	
130 135 140 145	
gaa gta gaa aaa ctg caa gaa aaa cga gag aaa agg aga ttg caa cag	715
Glu Val Glu Lys Leu Gln Glu Lys Arg Glu Lys Arg Arg Leu Gln Gln	
146 151 156 161	
caa gaa ctt aga gaa aaa aga gcc cag gac gtt gat gct aca aac cca	763
Gln Glu Leu Arg Glu Lys Arg Ala Gln Asp Val Asp Ala Thr Asn Pro	
162 167 172 177	
aat tat gaa att atg tgt atg atc aga gac ttt aga gga agt ttg gat	811
Asn Tyr Glu Ile Met Cys Met Ile Arg Asp Phe Arg Gly Ser Leu Asp	
178 183 188 193	
tat aga cca tta aca aca gca gat cct att gat gaa cat agg ata tgt	859
Tyr Arg Pro Leu Thr Thr Ala Asp Pro Ile Asp Glu His Arg Ile Cys	
194 199 204 209	
gtg tgt gta aga aaa cga cca ctc aat aaa aaa gaa act caa atg aaa	907
Val Cys Val Arg Lys Arg Pro Leu Asn Lys Lys Glu Thr Gln Met Lys	
210 215 220 225	
gat ctt gat gta atc aca att cct agt aaa gat gtt gtg atg gta cat	955
Asp Leu Asp Val Ile Thr Ile Pro Ser Lys Asp Val Val Met Val His	
226 231 236 241	
gaa cca aaa caa aaa gta gat tta aca agg tac cta gaa aac caa aca	1003
Glu Pro Lys Gln Lys Val Asp Leu Thr Arg Tyr Leu Glu Asn Gln Thr	
242 247 252 257	
ttt cgt ttt gat tat gcc ttt gat gac tca gct cct aat gaa atg gtt	1051
Phe Arg Phe Asp Tyr Ala Phe Asp Asp Ser Ala Pro Asn Glu Met Val	
258 263 268 273	
tac agg ttt act gct aga cca cta gtg gaa act ata ttt gaa agg gga	1099
Tyr Arg Phe Thr Ala Arg Pro Leu Val Glu Thr Ile Phe Glu Arg Gly	
274 279 284 289	
atg gct aca tgc ttt gct tat ggg cag act gga agt gga aaa act cat	1147
Met Ala Thr Cys Phe Ala Tyr Gly Gln Thr Gly Ser Gly Lys Thr His	
290 295 300 305	
act atg ggt ggt gac ttt tca gga aag aac caa gat tgt tct aaa gga	1195
Thr Met Gly Gly Asp Phe Ser Gly Lys Asn Gln Asp Cys Ser Lys Gly	
306 311 316 321	
att tat gca tta gca gct cga gat gtc ttt tta atg cta aag aag cca	1243
Ile Tyr Ala Leu Ala Ala Arg Asp Val Phe Leu Met Leu Lys Lys Pro	
322 327 332 337	
aac tat aag aag cta gaa ctt caa gta tat gca acc ttc ttt gaa att	1291
Asn Tyr Lys Lys Leu Glu Leu Gln Val Tyr Ala Thr Phe Phe Glu Ile	

338	343	348	353	
tat agt gga aag gtg ttt gac ttg cta aac agg aaa aca aaa tta aga				1339
Tyr Ser Gly Lys Val Phe Asp Leu Leu Asn Arg Lys Thr Lys Leu Arg				
354	359	364	369	
gtt cta gaa gat gga aaa cag cag gtt caa gtg gtg gga tta cag gaa				1387
Val Leu Glu Asp Gly Lys Gln Gln Val Gln Val Val Gly Leu Gln Glu				
370	375	380	385	
cgg gag gtc aaa tgt gtt gaa gat gta ctg aaa ctc att gac ata ggc				1435
Arg Glu Val Lys Cys Val Glu Asp Val Leu Lys Leu Ile Asp Ile Gly				
386	391	396	401	
aac agt tgc aga aca tcc ggt caa aca tct gca aat gca cat tca tct				1483
Asn Ser Cys Arg Thr Ser Gly Gln Thr Ser Ala Asn Ala His Ser Ser				
402	407	412	417	
cgg agc cat gca gtg ttt cag att att ctt aga agg aaa gga aaa cta				1531
Arg Ser His Ala Val Phe Gln Ile Ile Leu Arg Arg Lys Gly Lys Leu				
418	423	428	433	
cat ggc aaa ttt tct ctc att gat ttg gct gga aat gaa aga gga gct				1579
His Gly Lys Phe Ser Leu Ile Asp Leu Ala Gly Asn Glu Arg Gly Ala				
434	439	444	449	
gat act tcc agt gcg gac agg caa act agg ctt gaa ggt gct gaa att				1627
Asp Thr Ser Ser Ala Asp Arg Gln Thr Arg Leu Glu Gly Ala Glu Ile				
450	455	460	465	
aat aaa agc ctt tta gca ctc aag gag tgc atc aga gcc tta ggt aga				1675
Asn Lys Ser Leu Leu Ala Leu Lys Glu Cys Ile Arg Ala Leu Gly Arg				
466	471	476	481	
aat aaa cct cat act cct ttc cgt gca agt aaa ctc act cag gtg tta				1723
Asn Lys Pro His Thr Pro Phe Arg Ala Ser Lys Leu Thr Gln Val Leu				
482	487	492	497	
aga gat tct ttc ata ggt gaa aac tct cgt acc tgc atg att gcc aca				1771
Arg Asp Ser Phe Ile Gly Glu Asn Ser Arg Thr Cys Met Ile Ala Thr				
498	503	508	513	
atc tct cca gga atg gca tcc tgt gaa aat act ctt aat aca tta aga				1819
Ile Ser Pro Gly Met Ala Ser Cys Glu Asn Thr Leu Asn Thr Leu Arg				
514	519	524	529	
tat gca aat agg gtc aaa gaa ttg act gta gat cca act gct gct ggt				1867
Tyr Ala Asn Arg Val Lys Glu Leu Thr Val Asp Pro Thr Ala Ala Gly				
530	535	540	545	
gat gtt cgt cca ata atg cac cat cca cca aac cag att gat gac tta				1915
Asp Val Arg Pro Ile Met His His Pro Pro Asn Gln Ile Asp Asp Leu				
546	551	556	561	
gag aca cag tgg ggt gtg ggg agt tcc cct cag aga gat gat cta aaa				1963
Glu Thr Gln Trp Gly Val Gly Ser Ser Pro Gln Arg Asp Asp Leu Lys				
562	567	572	577	

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					1	

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2 7 12 17	

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Lys Gly Lys Glu Ile Asp Leu Glu Ser Ile Phe Ser Leu Asn Pro Asp	
34 39 44 49	

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Leu Val Pro Asp Glu Glu Ile Glu Pro Ser Pro Glu Thr Pro Pro Pro	
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Val Ala Ser Ile Lys Asn Asp Pro Pro Ser Arg Asp Asn Arg Val Val	
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Ala Gln Gln Asn Gly Ser Val Ser Asp Ile Ser Pro Val Gln Ala Ala	
114 119 124 129	

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Lys Lys Glu Phe Gly Pro Pro Ser Arg Arg Lys Ser Asn Cys Val Lys	
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Gln Glu Leu Arg Glu Lys Arg Ala Gln Asp Val Asp Ala Thr Asn Pro				
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aat tat gaa att atg tgt atg atc aga gac ttt aga gga agt ttg gat				811
Asn Tyr Glu Ile Met Cys Met Ile Arg Asp Phe Arg Gly Ser Leu Asp				
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Val Cys Val Arg Lys Arg Pro Leu Asn Lys Lys Glu Thr Gln Met Lys				
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Asp Leu Asp Val Ile Thr Ile Pro Ser Lys Asp Val Val Met Val His				
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Glu Pro Lys Gln Lys Val Asp Leu Thr Arg Tyr Leu Glu Asn Gln Thr				
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Phe Arg Phe Asp Tyr Ala Phe Asp Asp Ser Ala Pro Asn Glu Met Val				
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tac agg ttt act gct aga cca cta gtg gaa act ata ttt gaa agg gga				1099
Tyr Arg Phe Thr Ala Arg Pro Leu Val Glu Thr Ile Phe Glu Arg Gly				
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Thr Met Gly Gly Asp Phe Ser Gly Lys Asn Gln Asp Cys Ser Lys Gly				
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Ile Tyr Ala Leu Ala Ala Arg Asp Val Phe Leu Met Leu Lys Lys Pro				
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aac tat aag aag cta gaa ctt caa gta tat gca acc ttc ttt gaa att				1291
Asn Tyr Lys Lys Leu Glu Leu Gln Val Tyr Ala Thr Phe Phe Glu Ile				
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Tyr Ser Gly Lys Val Phe Asp Leu Leu Asn Arg Lys Thr Lys Leu Arg				
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gtt cta gaa gat gga aaa cag cag gtt caa gtg gtg gga tta cag gaa				1387
Val Leu Glu Asp Gly Lys Gln Gln Val Gln Val Val Gly Leu Gln Glu				
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cgg agc cat gca gtg ttt cag att att ctt aga agg aaa gga aaa cta Arg Ser His Ala Val Phe Gln Ile Ile Leu Arg Arg Lys Gly Lys Leu 418 423 428 433	1531
cat ggc aaa ttt tct ctc att gat ttg gct gga aat gaa aga gga gct His Gly Lys Phe Ser Leu Ile Asp Leu Ala Gly Asn Glu Arg Gly Ala 434 439 444 449	1579
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Ser Pro Gln Leu Phe Thr Phe His Glu Ala Val Ser Gln Met Val Glu	
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Pro Lys Arg Pro Arg Ala Leu *	
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Cys Asp Glu Cys Ile Arg Thr Ala Leu Leu Glu Ser Asp Glu His Thr
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tgt ccg acg tgt cat caa aat gat gtt tct cct gat gct tta att gcc      496
Cys Pro Thr Cys His Gln Asn Asp Val Ser Pro Asp Ala Leu Ile Ala
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Tyr Thr Lys Arg Leu Arg Lys Gln Leu Pro Pro Pro Pro Pro Pro Ile
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Ser Pro Gln Phe Pro Pro Gly Gln Pro Ala Thr Ala Gly Tyr Ser Val				
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Pro Pro Pro Gly Phe Pro Pro Ala Pro Ala Asn Leu Ser Thr Pro Trp				
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Val Ser Ser Gly Val Gln Thr Ala His Ser Asn Thr Ile Pro Thr Thr				
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Gln Ala Pro Pro Leu Ser Arg Glu Glu Phe Tyr Arg Glu Gln Arg Arg				
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Leu Lys Glu Glu Glu Lys Lys Lys Ser Lys Leu Asp Glu Phe Thr Asn				
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Asp Phe Ala Lys Glu Leu Met Glu Tyr Lys Lys Ile Gln Lys Glu Arg				
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Arg Arg Ser Phe Ser Arg Ser Lys Ser Pro Tyr Ser Gly Ser Ser Tyr				
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Ser Arg Ser Ser Tyr Thr Tyr Ser Lys Ser Arg Ser Gly Ser Thr Arg				
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Ser Arg Ser Tyr Ser Arg Ser Phe Ser Arg Ser His Ser Arg Ser Tyr				
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Ser Arg Ser Pro Pro Tyr Pro Arg Arg Gly Arg Gly Lys Ser Arg Asn				
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Tyr Arg Ser Arg Ser Arg Ser His Gly Tyr His Arg Ser Arg Ser Arg				
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Ser Pro Pro Tyr Arg Arg Tyr His Ser Arg Ser Arg Ser Pro Gln Ala				
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Phe Arg Gly Gln Ser Pro Asn Lys Arg Asn Val Pro Gln Gly Glu Thr				
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gaa cgt gaa tat ttt aat aga tac aga gaa gtt cca cca cca tat gac				1984
Glu Arg Glu Tyr Phe Asn Arg Tyr Arg Glu Val Pro Pro Pro Tyr Asp				
616	621	626	631	

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Lys Tyr Tyr Lys Gly Tyr Ala Ala Gly Ala Gln Pro Arg Pro Ser Ala	
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Asn Ser Pro Phe Thr Arg Gly Arg Arg Glu Asp Tyr Val Gly Gly Gln	
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Glu Ser Glu Asn Ala Pro Gly Asp Gly Lys Gly Asn Lys His Lys Lys	
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760 765 770 775	
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Glu Leu Leu Glu Thr Ser Arg Lys Ser Arg Glu Pro Thr Gly Val Glu	
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gaa aat aaa aca gac tca ttg ttt gtt ctc cca agt aga gat gat gcc	2512
Glu Asn Lys Thr Asp Ser Leu Phe Val Leu Pro Ser Arg Asp Asp Ala	
792 797 802 807	
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Thr Pro Val Arg Asp Glu Pro Met Asp Ala Glu Ser Ile Thr Phe Lys	
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Ser Val Ser Glu Lys Asp Lys Arg Glu Arg Asp Lys Pro Lys Ala Lys	
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Val Ser Thr Lys Pro Ser Asn Ile Val Lys Tyr Pro Glu Lys Glu Ser	
1176	1181 1186 1191
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Ile Ile Gln His Glu Val Lys Ser Ser Lys Asn Ser Ala Ser Ser Glu	
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 Lys Glu Thr Gly Val Ile Thr Pro Glu Glu Phe Val Ala Ala Gly Asp
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Leu Asp Thr Arg Lys Ile Val Glu Ala Cys Lys Ala Lys Thr Asp Ala	
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Gly Gly Glu Asp Ala Ile Leu Gln Thr Arg Thr Tyr Asp Leu Tyr Ile	
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Val Met Lys Lys Ile Ile Glu Thr Val Ala Glu Gly Gly Gly Glu Leu	
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Phe Arg Cys Phe Ile Cys Met Glu Lys Leu Arg Asp Ala Arg Leu Cys	
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Pro His Cys Ser Lys Leu Cys Cys Phe Ser Cys Ile Arg Arg Trp Leu	
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Arg Glu Leu Val Asn Cys Arg Trp Ala Glu Glu Val Thr Gln Gln Leu	
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Asp Thr Leu Gln Leu Cys Ser Leu Thr Lys His Glu Glu Asn Glu Lys	
77 82 87 92	
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Thr Lys Val Asn Glu Glu Val Ala Lys Leu Arg Arg Arg Leu Met Glu	
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Tyr Ile Gln Gln Ile Asn Asn Leu Lys Glu Arg Leu Thr Ile Glu Leu	
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Ser Arg Thr Gln Lys Ser Arg Asp Leu Ser Pro Pro Asp Asn His Leu	
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Cys Ser Asp Met Leu Leu Glu Gly Gly Pro Thr Thr Ala Ser Val Arg	
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Glu Ala Lys Glu Asp Glu Glu Asp Glu Glu Lys Ile Gln Asn Glu Asp	
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Tyr His His Glu Leu Ser Asp Gly Asp Leu Asp Leu Asp Leu Val Tyr	
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Lys Tyr Asp Leu Gln	Asn Leu Lys Pro Tyr	Thr Lys Tyr Val Leu Ser		
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Met Cys His Phe Thr	Thr Lys Ser Ala Pro	Pro Ser Gln Val Trp Asn		
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Tyr Phe His Asn Gly	Asp Tyr Pro Gly Glu	Pro Phe Ile Leu His His		
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Ile Ile Val Thr Ser	Ile Ala Leu Leu Val	Val Leu Tyr Lys Ile Tyr		
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Ile	Thr	Pro	Lys	Arg	Leu	Glu	Tyr	Thr	Arg	Lys	Lys	Glu	Asn	Glu	Leu	
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His Trp Asn Asp Leu Ala Leu Glu Phe His Tyr Met Arg Ser Leu Pro				
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Lys His Glu Arg Leu Val Asp Leu His Gly Ser Val Ile Asp Tyr Asn				
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His Gly Ser Val Gly Asp Ala Ile Ser Val Met Val Pro Asp Val Tyr	
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Gln Cys Trp Gln Thr Tyr Thr Phe Thr Arg Asp Pro Ile Tyr Phe Thr				
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ctg cag cag cat gca gag gcc aat ggt gtg gat ggt gtg gat gct ttg Leu Gln Gln His Ala Glu Ala Asn Gly Val Asp Gly Val Asp Ala Leu 795 800 805 810	2451
gac aca gcc tcc cac act aat aaa agt ggt tat cat gat gac tca gat Asp Thr Ala Ser His Thr Asn Lys Ser Gly Tyr His Asp Asp Ser Asp 811 816 821 826	2499
gag gac ctc ttg gaa tag ctcttc agaggagctg gaccagcat ggatggtgga Glu Asp Leu Leu Glu * 827 832	2553
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		Met	Leu	Arg	Ile	Pro	Val	Arg	Lys	Ala	Leu	Val	Gly		
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ctt	tct	aag	tct	cct	aaa	gga	tgt	gtt	cga	aca	act	gcc	aca	gca	216
Leu	Ser	Lys	Ser	Pro	Lys	Gly	Cys	Val	Arg	Thr	Thr	Ala	Thr	Ala	
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Ser	Asn	Leu	Ile	Glu	Val	Phe	Val	Asp	Gly	Gln	Ser	Val	Met	Val	
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ccg	gga	acg	acc	gtc	ctc	caa	gct	tgt	gag	aag	gtt	ggc	atg	cag	312
Pro	Gly	Thr	Thr	Val	Leu	Gln	Ala	Cys	Glu	Lys	Val	Gly	Met	Gln	
45				50					55					60	
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Pro	Arg	Phe	Cys	Tyr	His	Glu	Arg	Leu	Ser	Val	Ala	Gly	Asn	Cys	
61				66					71					76	
atg	tgc	ctt	gtt	gaa	att	gag	aaa	gcc	cct	aag	gtt	gta	gct	gct	408
Met	Cys	Leu	Val	Glu	Ile	Glu	Lys	Ala	Pro	Lys	Val	Val	Ala	Ala	
77				82					87					92	
gcc	atg	cca	gta	atg	aag	ggg	tgg	aat	atc	cta	aca	aac	tca	gaa	456
Ala	Met	Pro	Val	Met	Lys	Gly	Trp	Asn	Ile	Leu	Thr	Asn	Ser	Glu	
93				98					103					108	
tcc	aaa	aaa	gcc	agg	gaa	ggg	gtg	atg	gag	ttc	tta	tta	gca	aat	504
Ser	Lys	Lys	Ala	Arg	Glu	Gly	Val	Met	Glu	Phe	Leu	Leu	Ala	Asn	
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cca	ttg	gac	tgt	cct	att	tgt	gac	cag	gga	ggg	gaa	tgt	gat	ctg	552
Pro	Leu	Asp	Cys	Pro	Ile	Cys	Asp	Gln	Gly	Gly	Glu	Cys	Asp	Leu	
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Lys Arg Ala Val Glu Asp Lys Asn Ile Gly Pro Leu Val Lys Thr Ile	
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Met Thr Arg Cys Ile Gln Cys Thr Arg Cys Ile Arg Phe Ala Ser Glu	
173 178 183 188	
att gca gga gta gat gat ttg gga aca aca ggc aga gga aat gat atg	744
Ile Ala Gly Val Asp Asp Leu Gly Thr Thr Gly Arg Gly Asn Asp Met	
189 194 199 204	
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Gln Val Gly Thr Tyr Ile Glu Lys Met Phe Met Ser Glu Leu Ser Gly	
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Asn Ile Ile Asp Ile Cys Pro Val Gly Ala Leu Thr Ser Lys Pro Tyr	
221 226 231 236	
gcc ttt act gcc cgg cct tgg gaa aca aga aag aca gaa tcc att gat	888
Ala Phe Thr Ala Arg Pro Trp Glu Thr Arg Lys Thr Glu Ser Ile Asp	
237 242 247 252	
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Val Met Asp Ala Val Gly Ser Asn Ile Val Val Ser Thr Arg Thr Gly	
253 258 263 268	
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Glu Val Met Arg Ile Leu Pro Arg Met His Glu Asp Ile Asn Glu Glu	
269 274 279 284	
tgg atc tct gat aaa acc aga ttt gcc tat gat ggg cta aaa cgt caa	1032
Trp Ile Ser Asp Lys Thr Arg Phe Ala Tyr Asp Gly Leu Lys Arg Gln	
285 290 295 300	
aga ctt acc gag cca atg gtc aga aat gaa aaa ggg ctt tta acc tat	1080
Arg Leu Thr Glu Pro Met Val Arg Asn Glu Lys Gly Leu Leu Thr Tyr	
301 306 311 316	
act tct tgg gag gat gcg ctc tct cgc gta gct gga atg ttg cag agt	1128
Thr Ser Trp Glu Asp Ala Leu Ser Arg Val Ala Gly Met Leu Gln Ser	
317 322 327 332	
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Phe Gln Gly Lys Asp Val Ala Ala Ile Ala Gly Gly Leu Val Asp Ala	
333 338 343 348	
gaa gcc ctg gta gct ctc aaa gat ttg ctt aat aga gtg gac tct gag	1224
Glu Ala Leu Val Ala Leu Lys Asp Leu Leu Asn Arg Val Asp Ser Asp	
349 354 359 / 364	
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aaaagaaagg aacacaaata tgattgcttt cttactctgg gtttgccttt ctggcatggt	300
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	Met Val Cys Asn
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Ile Phe Val Phe Phe Arg Ala Leu Glu Leu His Pro Phe Ser Met Lys	
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Pro Leu Leu Arg Arg Ala Met Ala Tyr Glu Thr Leu Glu Gln Tyr Gly	
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aaa gct tat gtg gat tat aaa aca gtg ttg cag ata gac tgt gga ctc	559
Lys Ala Tyr Val Asp Tyr Lys Thr Val Leu Gln Ile Asp Cys Gly Leu	
37 42 47 52	
cag cta gca aat gac agt gtt aac agg cta tca aga att tta atg gag	607
Gln Leu Ala Asn Asp Ser Val Asn Arg Leu Ser Arg Ile Leu Met Glu	
53 58 63 68	
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Leu Asp Gly Pro Asn Trp Arg Glu Lys Leu Ser Leu Ile Pro Ala Val	
69 74 79 84	
cct gct tct gtg cca ctg caa gct tgg cat ccg gca aaa gag atg atc	703
Pro Ala Ser Val Pro Leu Gln Ala Trp His Pro Ala Lys Glu Met Ile	
85 90 95 100	
tca aaa caa gca gga gac tcc agc agc cat cgc cag cag ggc atc aca	751
Ser Lys Gln Ala Gly Asp Ser Ser Ser His Arg Gln Gln Gly Ile Thr	
101 106 111 116	
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Asp Glu Lys Thr Phe Lys Ala Leu Lys Glu Glu Gly Asn Gln Cys Val	
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Asn Asp Lys Asn Tyr Lys Asp Ala Leu Ser Lys Tyr Ser Glu Cys Leu	
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Lys Ile Asn Asn Lys Glu Cys Ala Ile Tyr Thr Asn Arg Ala Leu Cys	
149 154 159 164	
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389	394	399	404	
aca cca aac aac cat ttt act tta gaa gat ata cag gcc cta aaa agg				1663
Thr Pro Asn Asn His Phe Thr Leu Glu Asp Ile Gln Ala Leu Lys Arg				
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Gln Tyr Glu Leu *				
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gaaatgaatt tcttgtaaca ttctttttta aaagtggaag tcattaacag tgattattat				2078
atcacttata tcctgctaag atacacataa atcccatttt gtactagtac ctgtggatta				2138
cagtcagtta aaatgaaatg caacactgaa gtctataaça tgaaatgatt attaaattgt				2198
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ccttttttgt tttctgcttt tatgactgta tttattcctt tactgtaaaa gaatatgaag				2498
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<213> Homo sapiens

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ccctgggctc cccgccatga catcttcact ttgcagcttg tgctgagact gacccaagtg	240
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ccctttctc tctccctcc ccacctcgt tcttcccaat ttagtaactt agatgcttcc	360
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atgctttttac tcaagactac agaaagggtt gaagtagtgt gtgc atg gca tgc acg	776
Met Ala Cys Thr	
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tat gta agt aat ctg ggg aag aag caa aga tct gtt tca ttc tta gcc	824
Tyr Val Ser Asn Leu Gly Lys Lys Gln Arg Ser Val Ser Phe Leu Ala	
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Ser Gly Leu Met Arg Val Ser Thr Gly Pro Glu Leu Arg Leu His His	
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Ser Phe Val Leu Thr Gly Asp Val Gly Arg Arg Ile Cys Arg Leu Leu	
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Val Gly Leu Phe Thr Lys Gly Asp Thr Ser Ser Lys Arg Val His Pro	
53 58 63 68	
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Phe Ser Pro Gly Pro Cys Phe Leu Leu Cys Asp Leu Ala Arg Val Gly	
69 74 79 84	
agt tcc ccc aaa ata aac gtg tcc cca ttt tac cag aac caa acc tca	1064
Ser Ser Pro Lys Ile Asn Val Ser Pro Phe Tyr Gln Asn Gln Thr Ser	
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Arg Ser Ile Ser Arg Phe Ser Ser Gly *	
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	Met Ser His Ile Gln Ile Pro Pro Gly Leu Thr Glu Leu	
	1 5 10	
ctg cag ggc tac acg gtg gag gtg ctg cga cag cag ccg cct gac ctc	276	
Leu Gln Gly Tyr Thr Val Glu Val Leu Arg Gln Gln Pro Pro Asp Leu		
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gtc gaa ttc gca gtg gag tac ttc acc cgc ctg cgc gag gcc cgc gcc	324	
Val Glu Phe Ala Val Glu Tyr Phe Thr Arg Leu Arg Glu Ala Arg Ala		
30 35 40 45		
cca gcc tca gtc ctg ccc gcc gcc acc cca cgc cag agc ctg ggc cac	372	
Pro Ala Ser Val Leu Pro Ala Ala Thr Pro Arg Gln Ser Leu Gly His		
46 51 56 61		
ccc ccg cca gaa ccc ggc ccg gac cgt gtc gcc gac gcc aaa ggg gac	420	
Pro Pro Pro Glu Pro Gly Pro Asp Arg Val Ala Asp Ala Lys Gly Asp		
62 67 72 77		
agc gag tcg gag gag gac gag gac ttg gaa gtt cca gtt cct agc aga	468	
Ser Glu Ser Glu Glu Asp Glu Asp Leu Glu Val Pro Val Pro Ser Arg		
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Phe Asn Arg Arg Val Ser Val Cys Ala Glu Thr Tyr Asn Pro Asp Glu		
94 99 104 109		
gaa gag gaa gat aca gat cca agg gtg att cat cct aaa act gat gaa	564	
Glu Glu Glu Asp Thr Asp Pro Arg Val Ile His Pro Lys Thr Asp Glu		
110 115 120 125		
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Gln Arg Cys Arg Leu Gln Glu Ala Cys Lys Asp Ile Leu Leu Phe Lys		
126 131 136 141		
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Asn Leu Asp Gln Glu Gln Leu Ser Gln Val Leu Asp Ala Met Phe Glu		
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Arg Ile Val Lys Ala Asp Glu His Val Ile Asp Gln Gly Asp Asp Gly		
158 163 168 173		
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Asp Asn Phe Tyr Val Ile Glu Arg Gly Thr Tyr Asp Ile Leu Val Thr		
174 179 184 189		
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Lys Asp Asn Gln Thr Arg Ser Val Gly Gln Tyr Asp Asn Arg Gly Ser		
190 195 200 205		
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Phe Gly Glu Leu Ala Leu Met Tyr Asn Thr Pro Arg Ala Ala Thr Ile		
206 /211 216 221		
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Ser	Phe	Ile	Glu	Ser	Val	Pro	Leu	Leu	Lys	Ser	Leu	Glu	Val	Ser	Glu		
254					259					264					269		
cga	atg	aag	att	gtg	gat	gta	ata	gga	gag	aag	atc	tat	aag	gat	gga	1044	
Arg	Met	Lys	Ile	Val	Asp	Val	Ile	Gly	Glu	Lys	Ile	Tyr	Lys	Asp	Gly		
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gaa	cgc	ata	atc	act	cag	ggg	gaa	aag	gct	gat	agc	ttt	tac	atc	ata	1092	
Glu	Arg	Ile	Ile	Thr	Gln	Gly	Glu	Lys	Ala	Asp	Ser	Phe	Tyr	Ile	Ile		
286					291					296					301		
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Glu	Ser	Gly	Glu	Val	Ser	Ile	Leu	Ile	Arg	Ser	Arg	Thr	Lys	Ser	Asn		
302					307					312					317		
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Lys	Asp	Gly	Gly	Asn	Gln	Glu	Val	Glu	Ile	Ala	Arg	Cys	His	Lys	Gly		
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Gln	Tyr	Phe	Gly	Glu	Leu	Ala	Leu	Val	Thr	Asn	Lys	Pro	Arg	Ala	Ala		
334					339					344					349		
tca	gct	tat	gca	gtt	gga	gat	gtc	aaa	tgc	tta	gtt	atg	gat	gta	caa	1284	
Ser	Ala	Tyr	Ala	Val	Gly	Asp	Val	Lys	Cys	Leu	Val	Met	Asp	Val	Gln		
350					355					360					365		
gca	ttc	gag	agg	ctt	ctg	ggg	ccc	tgc	atg	gac	atc	atg	aag	agg	aac	1332	
Ala	Phe	Glu	Arg	Leu	Leu	Gly	Pro	Cys	Met	Asp	Ile	Met	Lys	Arg	Asn		
366					371					376					381		
atc	tca	cac	tat	gag	gaa	cag	ctg	gtg	aag	atg	ttt	ggc	tcc	agc	gtg	1380	
Ile	Ser	His	Tyr	Glu	Glu	Gln	Leu	Val	Lys	Met	Phe	Gly	Ser	Ser	Val		
382					387					392					397		
gat	ctg	ggc	aac	ctc	ggg	cag	tag	gtgtgccaca	ccccagagcc	ttcttagtgt						1434	
Asp	Leu	Gly	Asn	Leu	Gly	Gln	*										
398					403												
gacacacaaaa	ccttctgggc	agccacagaa	cacatacaga	aaacagacat	gacagaactg											1494	
ttcctgccgt	tgcgcact	gctgccattg	ctgtggttat	gggcatttag	aaaacttgaa											1554	
agtcagcact	aaaggatggg	cagaggttca	accacacct	ccactttgct	tctgaaggcc											1614	
cattcattag	accacttgta	aagattactc	caaccagtt	tttatatctt	tggttcaaaa											1674	
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1757

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<220>
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<222> (518)..(1633)

<400> 305

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tgcctcagca agtgaagagg aggaagaaga ggaggaggag gaggatgaag atgaagagga 180

ggaagtggca gcttggaggc tgcccccaag atggagtcag ctgggaacct cccagcggcc 240

ccgccccttc cgcgccactc atcgaaaaac ctgctcacag cgccgccgcc gagccatgag 300

agccttccgg atgctgctct actcaaaaag cacctcgctg acattccact ggaagctttg 360

ggggcgccac cggggccggc ggcggggcct cgcacacccc aagaaccatc tttcacccca 420

gcaagggggg gcgacgccac aggtgccatc cccctgttgt cgttttgact ccccccgggg 480

gccacctoca ccccggtgg gtctgctagg tgctctc atg gct gag gat ggg gtg 535
Met Ala Glu Asp Gly Val
1

aga ggg tct cca cca gtg ccc tct ggg ccc ccc atg gag gaa gat gga 583
Arg Gly Ser Pro Pro Val Pro Ser Gly Pro Pro Met Glu Glu Asp Gly
7 12 17 22

ctc agg tgg act cca aag tct cct ctg gac cct gac tcg ggc ctc ctt 631
Leu Arg Trp Thr Pro Lys Ser Pro Leu Asp Pro Asp Ser Gly Leu Leu
23 28 33 38

tca tgt act ctg ccc aac ggt ttt ggg gga caa tct ggg cca gaa ggg 679
Ser Cys Thr Leu Pro Asn Gly Phe Gly Gly Gln Ser Gly Pro Glu Gly
39 44 49 54

gag cgc agc ttg gca ccc cct gat gcc agc atc ctc atc agc aat gtg 727
Glu Arg Ser Leu Ala Pro Pro Asp Ala Ser Ile Leu Ile Ser Asn Val
55 60 65 70

tgc agc atc ggg gac cat gtg gcc cag gag ctt ttt cag ggc tca gat 775
Cys Ser Ile Gly Asp His Val Ala Gln Glu Leu Phe Gln Gly Ser Asp
71 76 81 86

ttg ggc atg gca gaa gag gca gag agg cct ggg gag aaa gcc ggc cag 823
Leu Gly Met Ala Glu Glu Ala Glu Arg Pro Gly Glu Lys Ala Gly Gln

87	92	97	102	
cac agc ccc ctg cga gag gag cat gtg acc tgc gta cag agc atc ttg His Ser Pro Leu Arg Glu Glu His Val Thr Cys Val Gln Ser Ile Leu 103 108 113 118				871
gac gaa ttc ctt caa acg tat ggc agc ctc ata ccc ctc agc act gat Asp Glu Phe Leu Gln Thr Tyr Gly Ser Leu Ile Pro Leu Ser Thr Asp 119 124 129 134				919
gag gta gta gag aag ctg gag gac att ttc cag cag gag ttt tcc acc Glu Val Val Glu Lys Leu Glu Asp Ile Phe Gln Gln Glu Phe Ser Thr 135 140 145 150				967
cct tcc agg aag ggc ctg gtg ttg cag ctg atc cag tct tac cag cgg Pro Ser Arg Lys Gly Leu Val Leu Gln Leu Ile Gln Ser Tyr Gln Arg 151 156 161 166				1015
atg cca ggc aat gcc atg gtg agg ggc ttc cga gtg gct tat aag cgg Met Pro Gly Asn Ala Met Val Arg Gly Phe Arg Val Ala Tyr Lys Arg 167 172 177 182				1063
cac gtg ctg acc atg gat gac ttg ggg acc ttg tat gga cag aac tgg His Val Leu Thr Met Asp Asp Leu Gly Thr Leu Tyr Gly Gln Asn Trp 183 188 193 198				1111
ctc aat gac cag gtg atg aac atg tat gga gac ctg gtc atg gac aca Leu Asn Asp Gln Val Met Asn Met Tyr Gly Asp Leu Val Met Asp Thr 199 204 209 214				1159
gtc cct gaa aag gtg cat ttc ttc aat agt ttc ttc tat gat aaa ctc Val Pro Glu Lys Val His Phe Phe Asn Ser Phe Phe Tyr Asp Lys Leu 215 220 225 230				1207
cgt acc aag ggt tat gat ggg gtg aaa agg tgg acc aaa aac gtg gac Arg Thr Lys Gly Tyr Asp Gly Val Lys Arg Trp Thr Lys Asn Val Asp 231 236 241 246				1255
atc ttc aat aag gag cta ctg cta atc ccc atc cac ctg gag gtg cat Ile Phe Asn Lys Glu Leu Leu Leu Ile Pro Ile His Leu Glu Val His 247 252 257 262				1303
tgg tcc ctc atc tct gtt gat gtg agg cga cgc acc atc acc tat ttt Trp Ser Leu Ile Ser Val Asp Val Arg Arg Arg Thr Ile Thr Tyr Phe 263 268 273 278				1351
gac tcg cag cgt acc cta aac cgc cgc tgc cct aag cat att gcc aag Asp Ser Gln Arg Thr Leu Asn Arg Arg Cys Pro Lys His Ile Ala Lys 279 284 289 294				1399
tat cta cag gca gag gcg gta aag aaa gac cga ctg gat ttc cac cag Tyr Leu Gln Ala Glu Ala Val Lys Lys Asp Arg Leu Asp Phe His Gln 295 300 305 310				1447
ggc tgg aaa ggt tac ttc aaa atg aat gtg gcc agg cag aat aat gac Gly Trp Lys Gly Tyr Phe Lys Met Asn Val Ala Arg Gln Asn Asn Asp 311 316 321 326				1495

agt gac tgt ggt gct ttt gtg ttg cag tac tgc aag cat ctg gcc ctg	1543
Ser Asp Cys Gly Ala Phe Val Leu Gln Tyr Cys Lys His Leu Ala Leu	
327 332 337 342	
tct cag cca ttc agc ttc acc cag cag gac atg ccc aaa ctt cgt cgg	1591
Ser Gln Pro Phe Ser Phe Thr Gln Gln Asp Met Pro Lys Leu Arg Arg	
343 348 353 358	
cag atc tac aag gag ctg tgt cac tgc aaa ctc act gtg tga gcctcgt	1640
Gln Ile Tyr Lys Glu Leu Cys His Cys Lys Leu Thr Val *	
359 364 369	
acccagacc ccaagcccat aaatgggaag ggagacatgg gaggcccttc ccaagaaact	1700
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tgtttcaatt tctgtatttt tttttctttg agagaatact tgttgatttc tgatgtgcag	1820
ggggtggcta cagaaaagcc cctttcttcc tctgtttgca ggggagtgtg gccctgtggc	1880
ctgggtggag cagtcactct ccccttccc cgtgcagga gcaggaaatc agtgctggg	1940
gtggtggcg gacaatagga tcaactgctg ccagatcttc aaacttttat atatatatat	2000
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<220>
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tgccctcagca agtgaagagg aggaagaaga ggaggaggag gaggatgaag atgaagagga	180
ggaagtggca gcttgagggc tgcccccaag atggagtcag ctgggaacct ccagcggcc	240
ccgcccttcc cgccccactc atcgaaaaac ctgctcacag cgccgccgcc gagccatgag	300
agccttccgg atgctgctct actcaaaaag cacctcgtg acattccact ggaagctttg	360
ggggcgccac cggggccggc ggcggggcct cgcacacccc aagaaccatc tttcacccca	420
gcaagggggg gcgacgccac aggtgccatc cccctgttgt cgttttgact cccccgggg	480

gccacctcca ccccggtctgg gtctgctagg tgctctc atg gct gag gat ggg gtg 535
Met Ala Glu Asp Gly Val
1

aga ggg tct cca cca gtg ccc tct ggg ccc ccc atg gag gaa gat gga 583
Arg Gly Ser Pro Pro Val Pro Ser Gly Pro Pro Met Glu Glu Asp Gly
7 12 17 22

ctc agg tgg act cca aag tct cct ctg gac cct gac tcg ggc ctc ctt 631
Leu Arg Trp Thr Pro Lys Ser Pro Leu Asp Pro Asp Ser Gly Leu Leu
23 28 33 38

tca tgt act ctg ccc aac ggt ttt ggg gga caa tct ggg cca gaa ggg 679
Ser Cys Thr Leu Pro Asn Gly Phe Gly Gly Gln Ser Gly Pro Glu Gly
39 44 49 54

gag cgc agc ttg gca ccc cct gat gcc agc atc ctc atc agc aat gtg 727
Glu Arg Ser Leu Ala Pro Pro Asp Ala Ser Ile Leu Ile Ser Asn Val
55 60 65 70

tgc agc atc ggg gac cat gtg gcc cag gag ctt ttt cag ggc tca gat 775
Cys Ser Ile Gly Asp His Val Ala Gln Glu Leu Phe Gln Gly Ser Asp
71 76 81 86

ttg ggc atg gca gaa gag gca gag agg cct ggg gag aaa gcc ggc cag 823
Leu Gly Met Ala Glu Glu Ala Glu Arg Pro Gly Glu Lys Ala Gly Gln
87 92 97 102

cac agc ccc ctg cga gag gag cat gtg acc tgc gta cag agc atc ttg 871
His Ser Pro Leu Arg Glu Glu His Val Thr Cys Val Gln Ser Ile Leu
103 108 113 118

gac gaa ttc ctt caa acg tat ggc agc ctc ata ccc ctc agc act gat 919
Asp Glu Phe Leu Gln Thr Tyr Gly Ser Leu Ile Pro Leu Ser Thr Asp
119 124 129 134

gag gta gta gag aag ctg gag gac att ttc cag cag gag ttt tcc acc 967
Glu Val Val Glu Lys Leu Glu Asp Ile Phe Gln Gln Glu Phe Ser Thr
135 140 145 150

cct tcc agg aag ggc ctg gtg ttg cag ctg atc cag tct tac cag cgg 1015
Pro Ser Arg Lys Gly Leu Val Leu Gln Leu Ile Gln Ser Tyr Gln Arg
151 156 161 166

atg cca ggc aat gcc atg gtg agg ggc ttc cga gtg gct tat aag cgg 1063
Met Pro Gly Asn Ala Met Val Arg Gly Phe Arg Val Ala Tyr Lys Arg
167 172 177 182

cac gtg ctg acc atg gat gac ttg ggg acc ttg tat gga cag aac tgg 1111
His Val Leu Thr Met Asp Asp Leu Gly Thr Leu Tyr Gly Gln Asn Trp
183 188 193 198

ctc aat gac cag gtg atg aac atg tat gga gac ctg gtc atg gac aca 1159
Leu Asn Asp Gln Val Met Asn Met Tyr Gly Asp Leu Val Met Asp Thr
199 204 209 214

gtc cct gaa aag gtg cat ttc ttc aat agt ttc ttc tat gat aaa ctc	1207
Val Pro Glu Lys Val His Phe Phe Asn Ser Phe Phe Tyr Asp Lys Leu	
215 220 225 230	
cgt acc aag ggt tat gat ggg gtg aaa agg tgg acc aaa aac gtg gac	1255
Arg Thr Lys Gly Tyr Asp Gly Val Lys Arg Trp Thr Lys Asn Val Asp	
231 236 241 246	
atc ttc aat aag gag cta ctg cta atc ccc atc cac ctg gag gtg cat	1303
Ile Phe Asn Lys Glu Leu Leu Leu Ile Pro Ile His Leu Glu Val His	
247 252 257 262	
tgg tcc ctc atc tct gtt gat gtg agg cga cgc acc atc acc tat ttt	1351
Trp Ser Leu Ile Ser Val Asp Val Arg Arg Arg Thr Ile Thr Tyr Phe	
263 268 273 278	
gac tcg cag cgt acc cta aac cgc cgc tgc cct aag cat att gcc aag	1399
Asp Ser Gln Arg Thr Leu Asn Arg Arg Cys Pro Lys His Ile Ala Lys	
279 284 289 294	
tat cta cag gca gag gcg gta aag aaa gac cga ctg gat ttc cac cag	1447
Tyr Leu Gln Ala Glu Ala Val Lys Lys Asp Arg Leu Asp Phe His Gln	
295 300 305 310	
ggc tgg aaa ggt tac ttc aaa atg tac tgc aag cat ctg gcc ctg tct	1495
Gly Trp Lys Gly Tyr Phe Lys Met Tyr Cys Lys His Leu Ala Leu Ser	
311 316 321 326	
cag cca ttc agc ttc acc cag cag gac atg ccc aaa ctt cgt cgg cag	1543
Gln Pro Phe Ser Phe Thr Gln Gln Asp Met Pro Lys Leu Arg Arg Gln	
327 332 337 342	
atc tac aag gag ctg tgt cac tgc aaa ctc act gtg tga gcctcgtacc	1592
Ile Tyr Lys Glu Leu Cys His Cys Lys Leu Thr Val *	
343 348 353	
ccagacccca agcccataaa tgggaaggga gacatgggag tcccttccca agaaactcca	1652
gttcctttcc tctcttgccct cttcccactc acttcccttt ggtttttcat atttaaagt	1712
ttcaatttct gtattttttt ttctttgaga gaatacttgt tgatttctga tgtgcagggg	1772
gtggctacag aaaagcccct ttcttcctct gtttgcaggg gagtgtggcc ctgtggcctg	1832
ggtggagcag tcatcctccc ctttccccgt gcaggagca ggaaatcagt gctgggggtg	1892
gtgggaggac aataggatca ctgcctgcca gatcttcaaa cttttatata tatatatata	1952
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tcctttgttg atacgta	2029

<210> 307

<211> 2982

<212> DNA
<213> Homo sapiens

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<222> (198)..(2474)

<400> 307

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aattttttgt	atttttagta	gggacgggg	ttcaccatgt	tggtcaggct	ggtctcaaac	180
tacaggcgtg	agccacc	atg ccc gcc caa gaa	gtg gaa ata tct ttt aag			230
		Met Pro Ala Gln Glu Val	Glu Ile Ser Phe Lys			
		1	5			
att gga gcc tac gat	cag cag ata tgg	gaa aag tca atc	gaa cag act			278
Ile Gly Ala Tyr Asp	Gln Gln Ile Trp	Glu Lys Ser Ile	Glu Gln Thr			
12	17	22	27			
cag att aag ggt ttg	aaa aac aaa ccg	aaa aag atg ggc	cac ata aag			326
Gln Ile Lys Gly Leu	Lys Asn Lys Pro	Lys Lys Met Gly	His Ile Lys			
28	33	38	43			
cca gac ttg att gac	gtt gac tta atc	aga ggg tca aca	ttt gcc aaa			374
Pro Asp Leu Ile Asp	Val Asp Leu Ile	Arg Gly Ser Thr	Phe Ala Lys			
44	49	54	59			
gca aaa cct gaa att	cca tgg aca tct	ctg act cgg aag	ggg ctt gtt			422
Ala Lys Pro Glu Ile	Pro Trp Thr Ser	Leu Thr Arg Lys	Gly Leu Val			
60	65	70	75			
cga gtt gta ttt ttt	cca ttg ttc agc	aat tgg tgg att	cag gtt acc			470
Arg Val Val Phe Phe	Pro Leu Phe Ser	Asn Trp Trp Ile	Gln Val Thr			
76	81	86	91			
tct tta aga atc ttt	gtt tgg ctg tta	cta ctt tat ttc	atg caa gtt			518
Ser Leu Arg Ile Phe	Val Trp Leu Leu	Leu Leu Tyr Phe	Met Gln Val			
92	97	102	107			
ata gca att gtc tta	tat ttg atg atg	cct att gtg aac	ata agt gaa			566
Ile Ala Ile Val Leu	Tyr Leu Met Met	Pro Ile Val Asn	Ile Ser Glu			
108	113	118	123			
gta ctt gga ccc ttg	tgc ctt atg cta	ctc atg gga act	gtc cac tgt			614
Val Leu Gly Pro Leu	Cys Leu Met Leu	Leu Met Gly Thr	Val His Cys			
124	129	134	139			
caa att gtg tct act	cag ata aca aga	cca tca gga aac	aat gga aat			662
Gln Ile Val Ser Thr	Gln Ile Thr Arg	Pro Ser Gly Asn	Asn Gly Asn			
140	145	150	155			
cga aga aga aga aaa	tta cga aaa act	gta aat ggt gat	ggg agc cga			710
Arg Arg Arg Arg Lys	Leu Arg Lys Thr	Val Asn Gly Asp	Gly Ser Arg			
156	161	166	171			

gaa aat gga aat aac tcc tct gat aaa gtc aga gga ata gaa act ttg	758
Glu Asn Gly Asn Asn Ser Ser Asp Lys Val Arg Gly Ile Glu Thr Leu	
172 177 182 187	
gaa tct gta ccc att att ggt ggt ttt tgg gag act atc ttt ggc aac	806
Glu Ser Val Pro Ile Ile Gly Gly Phe Trp Glu Thr Ile Phe Gly Asn	
188 193 198 203	
agg att aaa aga gta aaa tta ata tct aac aaa ggg act gaa act gac	854
Arg Ile Lys Arg Val Lys Leu Ile Ser Asn Lys Gly Thr Glu Thr Asp	
204 209 214 219	
aat gac cca agt tgt gtc cat cct atc att aag agg ⁴ aga caa tgt cga	902
Asn Asp Pro Ser Cys Val His Pro Ile Ile Lys Arg Arg Gln Cys Arg	
220 225 230 235	
cca gag att aga atg tgc caa aca aga gag aaa cca aaa ttt tca gat	950
Pro Glu Ile Arg Met Cys Gln Thr Arg Glu Lys Pro Lys Phe Ser Asp	
236 241 246 251	
gga gaa aag tgc cgt agg gag gct ttt agg cgt ttg ggt aat ggg gtg	998
Gly Glu Lys Cys Arg Arg Glu Ala Phe Arg Arg Leu Gly Asn Gly Val	
252 257 262 267	
tct gat gac ctg tca agt gaa gaa gat ggt gaa gca cgg aca cag atg	1046
Ser Asp Asp Leu Ser Ser Glu Glu Asp Gly Glu Ala Arg Thr Gln Met	
268 273 278 283	
ata tta ttg cgt agg agt gtg gaa ggg gcc tca agt gac aat ggt tgt	1094
Ile Leu Leu Arg Arg Ser Val Glu Gly Ala Ser Ser Asp Asn Gly Cys	
284 289 294 299	
gaa gtt aag aat aga aaa tca ata ctt tca agg cac cta aac tct cag	1142
Glu Val Lys Asn Arg Lys Ser Ile Leu Ser Arg His Leu Asn Ser Gln	
300 305 310 315	
gta aag aaa acc act aca agg tgg tgt cat att gtg cgg gat tca gat	1190
Val Lys Lys Thr Thr Thr Arg Trp Cys His Ile Val Arg Asp Ser Asp	
316 321 326 331	
agt ctg gct gaa tca gaa ttt gaa tca gca gcc ttc agc cag ggc tct	1238
Ser Leu Ala Glu Ser Glu Phe Glu Ser Ala Ala Phe Ser Gln Gly Ser	
332 337 342 347	
aga tcg ggt gtg agt ggt ggc tct cga agc ctc aac atg tca aga aga	1286
Arg Ser Gly Val Ser Gly Gly Ser Arg Ser Leu Asn Met Ser Arg Arg	
348 353 358 363	
gac tca gaa agc acc cgc cat gac tcg gag act gag gac atg tta tgg	1334
Asp Ser Glu Ser Thr Arg His Asp Ser Glu Thr Glu Asp Met Leu Trp	
364 369 374 379	
gac gac ctg cta cat ggc cca gag tgc cgg tca tct gtc acc agt gac	1382
Asp Asp Leu Leu His Gly Pro Glu Cys Arg Ser Ser Val Thr Ser Asp	
380 385 390 395	

agt gag ggg gcc cat gtg aat acc ctt cac tca ggg acc aaa cgt gac	1430
Ser Glu Gly Ala His Val Asn Thr Leu His Ser Gly Thr Lys Arg Asp	
396 401 406 411	
ccc aaa gag gat gtt ttt cag cag aat cat tta ttc tgg ctt cag aat	1478
Pro Lys Glu Asp Val Phe Gln Gln Asn His Leu Phe Trp Leu Gln Asn	
412 417 422 427	
tca agt cct tcc tct gat cga gtt agt gca ata atc tgg gag ggg aat	1526
Ser Ser Pro Ser Ser Asp Arg Val Ser Ala Ile Ile Trp Glu Gly Asn	
428 433 438 443	
gag tgc aaa aag atg gat atg tct gtg ttg gaa ata agt ggc atc atc	1574
Glu Cys Lys Lys Met Asp Met Ser Val Leu Glu Ile Ser Gly Ile Ile	
444 449 454 459	
atg agc agg gtc aat gcc tat cag caa gga gta ggt tat cag atg ctg	1622
Met Ser Arg Val Asn Ala Tyr Gln Gln Gly Val Gly Tyr Gln Met Leu	
460 465 470 475	
gga aat gtt gtc act att gga tta gca ttt ttt cca ttc tta cat cga	1670
Gly Asn Val Val Thr Ile Gly Leu Ala Phe Phe Pro Phe Leu His Arg	
476 481 486 491	
ctt ttc cgt gag aag agc ctt gac caa cta aag tcc att tca gct gag	1718
Leu Phe Arg Glu Lys Ser Leu Asp Gln Leu Lys Ser Ile Ser Ala Glu	
492 497 502 507	
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Glu Ile Leu Thr Leu Phe Cys Gly Ala Pro Pro Val Thr Pro Ile Ile	
508 513 518 523	
gtt ttg tcg ata att aat ttt ttt gaa aga ttg tgt ctt act tgg atg	1814
Val Leu Ser Ile Ile Asn Phe Phe Glu Arg Leu Cys Leu Thr Trp Met	
524 529 534 539	
ttt ttt ttc atg atg tgt gtg gca gag aga aca tat aaa cag aga ttt	1862
Phe Phe Phe Met Met Cys Val Ala Glu Arg Thr Tyr Lys Gln Arg Phe	
540 545 550 555	
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Leu Phe Ala Lys Leu Phe Ser His Ile Thr Ser Ala Arg Lys Ala Arg	
556 561 566 571	
aaa tat gaa ata cct cat ttc aga ctt aag aag gtg gag aat att aaa	1958
Lys Tyr Glu Ile Pro His Phe Arg Leu Lys Lys Val Glu Asn Ile Lys	
572 577 582 587	
ata tgg tta tca ctg cgt tcc tat cta aag aga cgg ggg cca cag cgt	2006
Ile Trp Leu Ser Leu Arg Ser Tyr Leu Lys Arg Arg Gly Pro Gln Arg	
588 593 598 603	
tca gtt gat gtg gtt gta tcc tcg gtt ttc cta ctg aca ctt tcg att	2054
Ser Val Asp Val Val Val Ser Ser Val Phe Leu Leu Thr Leu Ser Ile	
604 609 614 619	
gct ttc att tgt tgt gct cag gtt ctc caa gga cat aaa act ttc ctg	2102

Ala Phe Ile Cys Cys Ala Gln Val Leu Gln Gly His Lys Thr Phe Leu	
620 625 630 635	
aat gat gct tat aac tgg gag ttt ttg atc tgg gaa aca gct tta cta	2150
Asn Asp Ala Tyr Asn Trp Glu Phe Leu Ile Trp Glu Thr Ala Leu Leu	
636 641 646 651	
ctt ttt tta ttg cgt ctg gcc tca ctg ggg tct gaa acc aat aag aaa	2198
Leu Phe Leu Leu Arg Leu Ala Ser Leu Gly Ser Glu Thr Asn Lys Lys	
652 657 662 667	
tac agc aat gtt tca ata tta ctt aca gaa cag att aat tta tat ctt	2246
Tyr Ser Asn Val Ser Ile Leu Leu Thr Glu Gln Ile Asn Leu Tyr Leu	
668 673 678 683	
aag atg gaa aaa aag cca aat aag aaa gaa cag ctt act cta gta aac	2294
Lys Met Glu Lys Lys Pro Asn Lys Lys Glu Gln Leu Thr Leu Val Asn	
684 689 694 699	
aat gta tta aag ctg tcc acc aag ttg ttg aaa gag ctg gac aca cca	2342
Asn Val Leu Lys Leu Ser Thr Lys Leu Leu Lys Glu Leu Asp Thr Pro	
700 705 710 715	
ttt aga ctc tat gga ctg aca atg aat ccc tta atc tac aat atc aca	2390
Phe Arg Leu Tyr Gly Leu Thr Met Asn Pro Leu Ile Tyr Asn Ile Thr	
716 721 726 731	
aga gta gtt atc ctt tct gct gtc tca ggt gtt ata agt gat ctt cta	2438
Arg Val Val Ile Leu Ser Ala Val Ser Gly Val Ile Ser Asp Leu Leu	
732 737 742 747	
gga ttt aat ata aga ctg tgg aaa att aaa tca taa gctg agttaaagtc	2488
Gly Phe Asn Ile Arg Leu Trp Lys Ile Lys Ser *	
748 753 758	
ctggactctc ccctggctgg tatcaaaact tacctatcaa ggaaagtgat gactgcagaa	2548
accagtgaga taccacctg cttgttcaca tgcacaggtg ctctcagctc tgccaaagcg	2608
aatgaatggt gtttccggag gagcaagtcc ttttccaact ggggtgtgcat gctaaaaacc	2668
tgtattttca tgcttttcaa acaacatgaa tagtcagctg actaaagact gtgtgtgttg	2728
tggtaacaca aagacaattt tgtaagtttg cgcttcagta ctgtgacagt tatgtttact	2788
ggacatagtc ttttgggcaa ctatgataga tgcccaaagc atgaagcaaa tatcttttat	2848
tggaatatg caaattcaat acttttccat tatagtctat agaactggag atttcatttc	2908
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attcccgggt cgacccacgc gtccgggtga ggcggccgaa atcgtaggac ttccgaaagc	180
agcggtggcg tttgcttcac tgcttggaaag tgtgagtgcg cgaag	234
atg cga aag Met Arg Lys 1	
gtg gtt ttg atc acc ggg gct agc agt ggc att ggc ctg gcc ctc tgc	282
Val Val Leu Ile Thr Gly Ala Ser Ser Gly Ile Gly Leu Ala Leu Cys	
4 9 14 19	
aag cgg ctg ctg gcg gaa gat gat gag ctt cat ctg tgt ttg gcg tgc	330
Lys Arg Leu Leu Ala Glu Asp Asp Glu Leu His Leu Cys Leu Ala Cys	
20 25 30 35	
agg aac atg agc aag gca gaa gct gtc tgt gct gct ctg ctg gcc tct	378
Arg Asn Met Ser Lys Ala Glu Ala Val Cys Ala Ala Leu Leu Ala Ser	
36 41 46 51	
cac ccc act gct gag gtc acc att gtc cag gtg gat gtc agc aac ctg	426
His Pro Thr Ala Glu Val Thr Ile Val Gln Val Asp Val Ser Asn Leu	
52 57 62 67	
cag tcg gtc ttc cgg gcc tcc aag gaa ctt aag caa agg ttt cag aga	474
Gln Ser Val Phe Arg Ala Ser Lys Glu Leu Lys Gln Arg Phe Gln Arg	
68 73 78 83	
tta gac tgt ata tat cta aat gct ggg atc atg cct aat cca caa cta	522
Leu Asp Cys Ile Tyr Leu Asn Ala Gly Ile Met Pro Asn Pro Gln Leu	
84 89 94 99	
aat atc aaa gca ctt ttc ttt ggc ctc ttt tca aga aaa gtg att cat	570
Asn Ile Lys Ala Leu Phe Phe Gly Leu Phe Ser Arg Lys Val Ile His	
100 105 110 115	
atg ttc tcc aca gct gaa ggc ctg ctg acc cag ggt gat aag atc act	618
Met Phe Ser Thr Ala Glu Gly Leu Leu Thr Gln Gly Asp Lys Ile Thr	
116 121 126 131	
gct gat gga ctt cag gag gtg ttt gag acc aat gtc ttt ggc cat ttt	666
Ala Asp Gly Leu Gln Glu Val Phe Glu Thr Asn Val Phe Gly His Phe	
132 137 142 147	
atc ctg att cgg gaa ctg gag cct ctc ctc tgt cac agt gac aat cca	714
Ile Leu Ile Arg Glu Leu Glu Pro Leu Leu Cys His Ser Asp Asn Pro	

148	153	158	163	
tct cag ctc atc tgg	aca tca tct cgc agt	gca agg aaa tct aat ttc		762
Ser Gln Leu Ile Trp	Thr Ser Ser Arg Ser	Ala Arg Lys Ser Asn Phe		
164	169	174	179	
agc ctc gag gac ttc	cag cac agc aaa ggc	aag gaa ccc tac agc tct		810
Ser Leu Glu Asp Phe	Gln His Ser Lys Gly	Lys Glu Pro Tyr Ser Ser		
180	185	190	195	
tcc aaa tat gcc act	gac ctt ttg agt gtg	gct ttg aac agg aac ttc		858
Ser Lys Tyr Ala Thr	Asp Leu Leu Ser Val	Ala Leu Asn Arg Asn Phe		
196	201	206	211	
aac cag cag ggt ctc	tat tcc aat gtg gcc	tgt cca ggt aca gca ttg		906
Asn Gln Gln Gly Leu	Tyr Ser Asn Val Ala	Cys Pro Gly Thr Ala Leu		
212	217	222	227	
acc aat ttg aca tat	gga att ctg cct ccg	ttt ata tgg acg ctg ttg		954
Thr Asn Leu Thr Tyr	Gly Ile Leu Pro Pro	Phe Ile Trp Thr Leu Leu		
228	233	238	243	
atg ccg gca ata ttg	cta ctt cgc ttt ttt	gca aat gca ttc act ttg		1002
Met Pro Ala Ile Leu	Leu Leu Arg Phe Phe	Ala Asn Ala Phe Thr Leu		
244	249	254	259	
aca cca tat aat gga	aca gaa gct ctg gta	tgg ctt ttc cac caa aag		1050
Thr Pro Tyr Asn Gly	Thr Glu Ala Leu Val	Trp Leu Phe His Gln Lys		
260	265	270	275	
cct gaa tct ctc aat	cct ctg atc aaa tat	ctg agt gcc acc act ggc		1098
Pro Glu Ser Leu Asn	Pro Leu Ile Lys Tyr	Leu Ser Ala Thr Thr Gly		
276	281	286	291	
ttt gga aga aat tat	att atg acc cag aag	atg gac cta gat gaa gac		1146
Phe Gly Arg Asn Tyr	Ile Met Thr Gln Lys	Met Asp Leu Asp Glu Asp		
292	297	302	307	
act gct gaa aaa ttt	tat caa aag tta ctg	gaa ctg gaa aag cac att		1194
Thr Ala Glu Lys Phe	Tyr Gln Lys Leu Leu	Glu Leu Glu Lys His Ile		
308	313	318	323	
agg gtc act att caa	aaa aca gat aat cag	gcc agg ctc agt ggc tca		1242
Arg Val Thr Ile Gln	Lys Thr Asp Asn Gln	Ala Arg Leu Ser Gly Ser		
324	329	334	339	
tgc cta taa ttccagc	actttgggag gccaaaggcag	aaggatcact tgagaccagg		1298
Cys Leu *				
340				
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atgcacctcc ctctgcggtg gggtcggga catggcaggt aatgagccgg acgaggggag      180
ccaagctgga gtttacacag gcaaactgtc agaaaagagt agcctgggct gtctggaaat      240
ctgagcc  atg gac ttt ccc cag cac agc cag cat gtc ttg gaa cag ctg      289
          Met Asp Phe Pro Gln His Ser Gln His Val Leu Glu Gln Leu
          1             5             10

aac cag cag cgg cag ctg ggg ctt ctc tgt gac tgc acc ttt gtg gtg      337
Asn Gln Gln Arg Gln Leu Gly Leu Leu Cys Asp Cys Thr Phe Val Val
15             20             25             30

gac ggt gtt cac ttt aag gct cat aaa gca gtg ctg gcg gcc tgc agc      385
Asp Gly Val His Phe Lys Ala His Lys Ala Val Leu Ala Ala Cys Ser
31             36             41             46

gag tac ttc aag atg ctc ttc gtg gac cag aag gac gtg gtg cac ctg      433
Glu Tyr Phe Lys Met Leu Phe Val Asp Gln Lys Asp Val Val His Leu
47             52             57             62

gac atc agt aac gcg gca ggc ctg ggg cag gtg ctg gag ttt atg tac      481
Asp Ile Ser Asn Ala Ala Gly Leu Gly Gln Val Leu Glu Phe Met Tyr
63             68             73             78

acg gcc aag ctg agc ctg agc cct gag aac gtg gat gat gtg ctg gcc      529
Thr Ala Lys Leu Ser Leu Ser Pro Glu Asn Val Asp Asp Val Leu Ala
79             84             89             94

gtg gcc act ttc ctc caa atg cag gac atc atc acg gcc tgc cat gcc      577
Val Ala Thr Phe Leu Gln Met Gln Asp Ile Ile Thr Ala Cys His Ala
95             100            105            110

ctc aag tca ctt gct gag ccg gct acc agc cct ggg gga aat gcg gag      625
Leu Lys Ser Leu Ala Glu Pro Ala Thr Ser Pro Gly Gly Asn Ala Glu
111            116            121            126

gcc ttg gcc aca gaa gga ggg gac aag aga gcc aaa gag gag aag gtg      673
Ala Leu Ala Thr Glu Gly Gly Asp Lys Arg Ala Lys Glu Glu Lys Val
127            132            137            142

gcc acc agc acg ctg agc agg ctg gag cag gca gga cgc agc aca ccc      721
Ala Thr Ser Thr Leu Ser Arg Leu Glu Gln Ala Gly Arg Ser Thr Pro
143            148            153            158

ata ggc ccc agc agg gac ctc aag gag gag cgc ggc ggt cag gcc cag      769
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Ile Gly Pro Ser Arg Asp Leu Lys Glu Glu Arg Gly Gly Gln Ala Gln	
159	174
164	169
agt gcg gcc agc ggt gca gag cag aca gag aaa gcc gat gcg ccc cgg	817
Ser Ala Ala Ser Gly Ala Glu Gln Thr Glu Lys Ala Asp Ala Pro Arg	
175	190
180	185
gag ccg ccg cct gtg gag ctc aag cca gac ccc acg agt ggc atg gct	865
Glu Pro Pro Pro Val Glu Leu Lys Pro Asp Pro Thr Ser Gly Met Ala	
191	206
196	201
gcc gca gaa gct gag gcc gct ttg tcc gag agc tcg gag caa gaa atg	913
Ala Ala Glu Ala Glu Ala Ala Leu Ser Glu Ser Ser Glu Gln Glu Met	
207	222
212	217
gag gtg gag ccc gcc cgg aaa ggg gaa gag gag caa aag gag caa gag	961
Glu Val Glu Pro Ala Arg Lys Gly Glu Glu Glu Gln Lys Glu Gln Glu	
223	238
228	233
gag caa gag gag gag ggc gca ggg cca gct gag gtc aag gag gag ggt	1009
Glu Gln Glu Glu Glu Gly Ala Gly Pro Ala Glu Val Lys Glu Glu Gly	
239	254
244	249
tcc cag ctg gag aac gga gag gcc ccc gag gag aac gag aat gag gag	1057
Ser Gln Leu Glu Asn Gly Glu Ala Pro Glu Glu Asn Glu Asn Glu Glu	
255	270
260	265
tca gcg ggc aca gac tcg ggg cag gag ctc ggc tcc gag gcc cgg ggc	1105
Ser Ala Gly Thr Asp Ser Gly Gln Glu Leu Gly Ser Glu Ala Arg Gly	
271	286
276	281
ctg cgc tca ggc acc tac ggc gac cgc acg gag tcc aag gcc tac ggc	1153
Leu Arg Ser Gly Thr Tyr Gly Asp Arg Thr Glu Ser Lys Ala Tyr Gly	
287	302
292	297
tcc gtc atc cac aag tgc gag gac tgt ggg aag gag ttc acg cac acg	1201
Ser Val Ile His Lys Cys Glu Asp Cys Gly Lys Glu Phe Thr His Thr	
303	318
308	313
ggg aac ttc aag cgg cac atc cgc atc cac acg ggg gag aag ccc ttc	1249
Gly Asn Phe Lys Arg His Ile Arg Ile His Thr Gly Glu Lys Pro Phe	
319	334
324	329
tcg tgc cgg gag tgc agc aag gcc ttt tcc gac ccg gcc gcg tgc aag	1297
Ser Cys Arg Glu Cys Ser Lys Ala Phe Ser Asp Pro Ala Ala Cys Lys	
335	350
340	345
gcc cat gag aag acg cac agc cct ctg aag ccc tac ggc tgc gag gag	1345
Ala His Glu Lys Thr His Ser Pro Leu Lys Pro Tyr Gly Cys Glu Glu	
351	366
356	361
tgc ggg aag agc tac cgc ctc atc agc ctg ctg aac ctg cac aag aag	1393
Cys Gly Lys Ser Tyr Arg Leu Ile Ser Leu Leu Asn Leu His Lys Lys	
367	382
372	377
cgg cac tcg ggc gag gcg cgc tac cgc tgc gag gac tgc ggc aag ctc	1441
Arg His Ser Gly Glu Ala Arg Tyr Arg Cys Glu Asp Cys Gly Lys Leu	

383	388	393	398	
ttc acc acc tcg ggc aac ctc aag cgc cac cag ctg gtg cac agc ggc				1489
Phe Thr Thr Ser Gly Asn Leu Lys Arg His Gln Leu Val His Ser Gly				
399	404	409	414	
gag aag ccc tac cag tgc gac tac tgc ggc cgc tcc ttc tcc gac ccc				1537
Glu Lys Pro Tyr Gln Cys Asp Tyr Cys Gly Arg Ser Phe Ser Asp Pro				
415	420	425	430	
act tcc aag atg cgc cac ctg gag acc cac gac acg gac aag gag cac				1585
Thr Ser Lys Met Arg His Leu Glu Thr His Asp Thr Asp Lys Glu His				
431	436	441	446	
aag tgc cca cac tgc gac aag aag ttc aac cag gta ggg aac ctg aag				1633
Lys Cys Pro His Cys Asp Lys Lys Phe Asn Gln Val Gly Asn Leu Lys				
447	452	457	462	
gcc cac ctg aag atc cac atc gct gac ggg ccc ctc aag tgc cga gag				1681
Ala His Leu Lys Ile His Ile Ala Asp Gly Pro Leu Lys Cys Arg Glu				
463	468	473	478	
tgt ggg aag cag ttc acc acc tca ggg aac ctg aag cgg cac ctt cgg				1729
Cys Gly Lys Gln Phe Thr Thr Ser Gly Asn Leu Lys Arg His Leu Arg				
479	484	489	494	
atc cac agc ggg gag aag ccc tac gtg tgc atc cac tgc cag cga cag				1777
Ile His Ser Gly Glu Lys Pro Tyr Val Cys Ile His Cys Gln Arg Gln				
495	500	505	510	
ttt gca gac ccc ggc gct ctg cag cgg cac gtc cgc att cac aca ggt				1825
Phe Ala Asp Pro Gly Ala Leu Gln Arg His Val Arg Ile His Thr Gly				
511	516	521	526	
gag aag cca tgc cag tgt gtg atg tgc ggt aag gcc ttc acc cag gcc				1873
Glu Lys Pro Cys Gln Cys Val Met Cys Gly Lys Ala Phe Thr Gln Ala				
527	532	537	542	
agc tcc ctc atc gcc cac gtg cgc cag cac acc ggg gag aag ccc tac				1921
Ser Ser Leu Ile Ala His Val Arg Gln His Thr Gly Glu Lys Pro Tyr				
543	548	553	558	
gtc tgc gag cgc tgc ggc aag aga ttc gtc cag tcc agc cag ttg gcc				1969
Val Cys Glu Arg Cys Gly Lys Arg Phe Val Gln Ser Ser Gln Leu Ala				
559	564	569	574	
aat cat att cgc cac cac gac aac atc cgc cca cac aag tgc agc gtg				2017
Asn His Ile Arg His His Asp Asn Ile Arg Pro His Lys Cys Ser Val				
575	580	585	590	
tgc agc aag gcc ttc gtg aac gtg ggg gac ctg tcc aag cac atc atc				2065
Cys Ser Lys Ala Phe Val Asn Val Gly Asp Leu Ser Lys His Ile Ile				
591	596	601	606	
att cac act gga gag aag cct tac ctg tgt gat aag tgt ggg cgt ggc				2113
Ile His Thr Gly Glu Lys Pro Tyr Leu Cys Asp Lys Cys Gly Arg Gly				
607	612	617	622	

ttc aac cgg gta gac aac ctg cgc tcc cac gtg aag acc gtg cac cag	2161
Phe Asn Arg Val Asp Asn Leu Arg Ser His Val Lys Thr Val His Gln	
623 628 633 638	
ggc aag gca ggc atc aag atc ctg gag ccc gag gag ggc agt gag gtc	2209
Gly Lys Ala Gly Ile Lys Ile Leu Glu Pro Glu Glu Gly Ser Glu Val	
639 644 649 654	
agc gtg gtc act gtg gat gac atg gtc acg ctg gct acc gag gca ctg	2257
Ser Val Val Thr Val Asp Asp Met Val Thr Leu Ala Thr Glu Ala Leu	
655 660 665 670	
gca gcg aca gcc gtc act cag ctc aca gtg gtg ccg gtg gga gct gca	2305
Ala Ala Thr Ala Val Thr Gln Leu Thr Val Val Pro Val Gly Ala Ala	
671 676 681 686	
gtg aca gcc gat gag acg gaa gtc ctg aag gcc gag atc agc aaa gct	2353
Val Thr Ala Asp Glu Thr Glu Val Leu Lys Ala Glu Ile Ser Lys Ala	
687 692 697 702	
gtg aag caa gtg cag gaa gaa gac ccc aac act cac atc ctc tac gcc	2401
Val Lys Gln Val Gln Glu Glu Asp Pro Asn Thr His Ile Leu Tyr Ala	
703 708 713 718	
tgt gac tcc tgt ggg gac aag ttt ctg gat gcc aac agc ctg gct cag	2449
Cys Asp Ser Cys Gly Asp Lys Phe Leu Asp Ala Asn Ser Leu Ala Gln	
719 724 729 734	
cat gtg cga atc cac aca gcc cag gca ctg gtc atg ttc cag aca gac	2497
His Val Arg Ile His Thr Ala Gln Ala Leu Val Met Phe Gln Thr Asp	
735 740 745 750	
gcg gac ttc tat cag cag tat ggg cca ggt ggc acg tgg cct gcc ggg	2545
Ala Asp Phe Tyr Gln Gln Tyr Gly Pro Gly Gly Thr Trp Pro Ala Gly	
751 756 761 766	
cag gtg ctg cag gct ggg gag ctg gtc ttc cgc cct cgc gac ggg gct	2593
Gln Val Leu Gln Ala Gly Glu Leu Val Phe Arg Pro Arg Asp Gly Ala	
767 772 777 782	
gag ggc cag ccc gca ctg gca gag acc tcc cct aca gct cct gaa tgt	2641
Glu Gly Gln Pro Ala Leu Ala Glu Thr Ser Pro Thr Ala Pro Glu Cys	
783 788 793 798	
ccc ccg cct gcc gag tga gctggc ggcccttctg actgtttatt taaggatgga	2695
Pro Pro Pro Ala Glu *	
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ggagggcgggt	gattctggct	ttgtcagtct	ctctcggtcg	ggcccatctc	tgagggacaa	180
ggacctggaa	atg gag gag cta	atg ctg cag gat	gag aca ctg ctg ggg			229
	Met Glu Glu Leu	Met Leu Gln Asp	Glu Thr Leu Leu Gly			
	1	5	10			
acc atg cag agc tac	atg gat gcc tcc ctt	atc tcc ctc att	gag gat			277
Thr Met Gln Ser Tyr	Met Asp Ala Ser Leu	Ile Ser Leu Ile	Glu Asp			
14	19	24	29			
ttt ggg agc ctt gga	gag gtt gaa atg tct	ctt cca gat ccc	tct tgg			325
Phe Gly Ser Leu Gly	Glu Val Glu Met Ser	Leu Pro Asp Pro	Ser Trp			
30	35	40	45			
gac ttc tcc cca ccc	tct ttc tta gag acc	tct tcc ccc aag	ctt cct			373
Asp Phe Ser Pro Pro	Ser Phe Leu Glu Thr	Ser Ser Pro Lys	Leu Pro			
46	51	56	61			
agc tgg aga ccc cca	aga tca aga cca cgc	tgg ggc caa tcc	cca cct			421
Ser Trp Arg Pro Pro	Arg Ser Arg Pro Arg	Trp Gly Gln Ser	Pro Pro			
62	67	72	77			
ccc cag cag cgc agt	gat gga gaa gaa gag	gag gag gtg gcc	agc ttc			469
Pro Gln Gln Arg Ser	Asp Gly Glu Glu Glu	Glu Glu Val Ala	Ser Phe			
78	83	88	93			
agt ggc cag att ctt	gcc ggg gag ctt gac	aac tgt gtg agc	agt atc			517
Ser Gly Gln Ile Leu	Ala Gly Glu Leu Asp	Asn Cys Val Ser	Ser Ile			
94	99	104	109			
ccg gac ttc ccc atg	cat ttg gcc tgc cct	gag gag gaa gat	aaa gca			565
Pro Asp Phe Pro Met	His Leu Ala Cys Pro	Glu Glu Glu Asp	Lys Ala			
110	115	120	125			
aca gca gca gag atg	gca gtg cca gca gct	ggg gat gag agc	atc tcc			613
Thr Ala Ala Glu Met	Ala Val Pro Ala Ala	Gly Asp Glu Ser	Ile Ser			
126	131	136	141			
tcc ctg agt gag ctg	gtg cgg gcc atg cac	cca tac tgc ctg	ccc aac			661
Ser Leu Ser Glu Leu	Val Arg Ala Met His	Pro Tyr Cys Leu	Pro Asn			
142	147	152	157			
ctc acc cac ctg gca	tca ctt gag gat gag	ctt cag gag cag	cca gat			709
Leu Thr His Leu Ala	Ser Leu Glu Asp	Glu Leu Gln Glu	Gln Pro Asp			

158	163	168	173	
gat ttg aca ctg cct	gag ggc tgc gta gtg	ctg gag att gtg ggg	cag	757
Asp Leu Thr Leu Pro	Glu Gly Cys Val Val	Leu Glu Ile Val Gly	Gln	
174	179	184	189	
gca gcc aca gct ggc	gat gac ctg gag atc	cca gtt gtg gtg cga	cag	805
Ala Ala Thr Ala Gly	Asp Asp Leu Glu Ile	Pro Val Val Val Arg	Gln	
190	195	200	205	
gtc tct cct gga ccc	cgg cct gtg ctc ctg	gat gac tcg cta gag	act	853
Val Ser Pro Gly Pro	Arg Pro Val Leu Leu	Asp Asp Ser Leu Glu	Thr	
206	211	216	221	
agt tct gcc ttg cag	ctg ctt atg cct aca	ctg gag tca gag aca	gag	901
Ser Ser Ala Leu Gln	Leu Leu Met Pro Thr	Leu Glu Ser Glu Thr	Glu	
222	227	232	237	
gct gct gtg ccc aag	gta acc ctc tgc tct	gag aaa gag ggg ttg	tca	949
Ala Ala Val Pro Lys	Val Thr Leu Cys Ser	Glu Lys Glu Gly Leu	Ser	
238	243	248	253	
ttg aac tca gag gag	aag ctg gac tca gcc	tgc tta ttg aag ccc	agg	997
Leu Asn Ser Glu Glu	Lys Leu Asp Ser Ala	Cys Leu Leu Lys Pro	Arg	
254	259	264	269	
gag gtc gtg gag ccg	gtg gtg ccc aag gag	cct cag aac cca cct	gcc	1045
Glu Val Val Glu Pro	Val Val Pro Lys Glu	Pro Gln Asn Pro Pro	Ala	
270	275	280	285	
aat gca gca cca ggt	tcc cag aga gct cga	aag ggc agg aag aag	aag	1093
Asn Ala Ala Pro Gly	Ser Gln Arg Ala Arg	Lys Gly Arg Lys Lys	Lys	
286	291	296	301	
agc aag gag cag cca	gca gcc tgt gtg gaa	ggc tat gcc agg agg	ctg	1141
Ser Lys Glu Gln Pro	Ala Ala Cys Val Glu	Gly Tyr Ala Arg Arg	Leu	
302	307	312	317	
agg tca tct tct cgc	ggg cag tct act gta	ggt aca gaa gtg acc	tct	1189
Arg Ser Ser Ser Arg	Gly Gln Ser Thr Val	Gly Thr Glu Val Thr	Ser	
318	323	328	333	
cag gta gac aac ttg	cag aaa cag cct cag	gaa gaa ctt caa aaa	gag	1237
Gln Val Asp Asn Leu	Gln Lys Gln Pro Gln	Glu Glu Leu Gln Lys	Glu	
334	339	344	349	
tct ggg cct ctc cag	ggt aag ggg aag ccc	cgg gct tgg gct cgg	gcc	1285
Ser Gly Pro Leu Gln	Gly Lys Gly Lys Pro	Arg Ala Trp Ala Arg	Ala	
350	355	360	365	
tgg gca gct gcc ttg	gag aat tct agc cct	aag aac ttg gag aga	agt	1333
Trp Ala Ala Ala Leu	Glu Asn Ser Ser Pro	Lys Asn Leu Glu Arg	Ser	
366	371	376	381	
gct gga caa agt agt	cct gct aaa gaa ggc	cct cta gac ctc tac	cca	1381
Ala Gly Gln Ser Ser	Pro Ala Lys Glu Gly	Pro Leu Asp Leu Tyr	Pro	
382	387	392	397	

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Lys Leu Ala Asp Thr Ile Gln Thr Asn Pro Ile Pro Thr His Leu Ser	
398 403 408 413	
ttg gtc gac tct gcc caa gcc agc ccc atg cca gtt gac tct gtt gaa	1477
Leu Val Asp Ser Ala Gln Ala Ser Pro Met Pro Val Asp Ser Val Glu	
414 419 424 429	
gct gat ccc act gca gtt ggc cct gtt cta gct ggc cct gta cct gtt	1525
Ala Asp Pro Thr Ala Val Gly Pro Val Leu Ala Gly Pro Val Pro Val	
430 435 440 445	
gac cct ggg ttg gtt gac ctt gct tca acc agc tca gaa ctg gtt gag	1573
Asp Pro Gly Leu Val Asp Leu Ala Ser Thr Ser Ser Glu Leu Val Glu	
446 451 456 461	
cct ctc ccg gct gag cca gtg ctg atc aac cca gtc ctg gct gac tca	1621
Pro Leu Pro Ala Glu Pro Val Leu Ile Asn Pro Val Leu Ala Asp Ser	
462 467 472 477	
gca gca gtt gac cct gca gtg gtt ccc atc tca gat aac ttg cca cca	1669
Ala Ala Val Asp Pro Ala Val Val Pro Ile Ser Asp Asn Leu Pro Pro	
478 483 488 493	
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Ser Arg Pro Thr Asp Pro Arg Arg Gly Ala Val Ser Ser Ala Leu Gly	
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Gly Ser Ala Pro Gln Leu Leu Val Glu Ser Glu Ser Leu Asp Pro Pro	
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Lys Thr Ile Ile Pro Glu Val Lys Glu Val Val Asp Ser Leu Lys Ile	
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Ser Leu Ser Glu Tyr Arg Arg Arg Arg Gln Gln Arg Gln Ala Glu Thr	
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Glu Glu Arg Ser Pro Gln Pro Pro Thr Gly Lys Trp Pro Ser Leu Pro	
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Glu Thr Pro Thr Gly Leu Ala Asp Ile Pro Cys Leu Val Ile Pro Pro	
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Ala Pro Ala Lys Lys Thr Ala Leu Gln Arg Ser Pro Glu Thr Pro Leu	
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Pro Phe Pro Ala Gly Gly Leu Gly Met Pro Pro Ser Leu Pro Pro Pro	
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Pro Leu Gln Pro Pro Ser Leu Pro Leu Ser Met Gly Pro Val Leu Pro	
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Asp Pro Phe Thr His Tyr Ala Pro Leu Pro Ser Trp Pro Cys Tyr Pro	
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Thr Cys Thr Tyr Gly Pro Leu Gly Trp Gly Pro Gly Pro Gln His Ala	
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Pro Phe Trp Ser Thr Val Pro Pro Pro Pro Leu Pro Pro Ala Ser Ile	
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Leu Ala Lys Ala Lys Ser Pro Lys Ser Thr Ala Gln Glu Gly Thr Leu				
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Lys Pro Glu Gly Val Thr Glu Ala Lys His Pro Ala Ala Val Arg Leu				
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Gln Glu Gly Val His Gly Pro Ser Arg Val His Val Gly Ser Gly Asp				
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cat gac tat tgt gtc cgg agc agg acc ccc cca aaa aag atg cct gcc				3637
His Asp Tyr Cys Val Arg Ser Arg Thr Pro Pro Lys Lys Met Pro Ala				
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cta gtc att cca gag gtg ggc tcc cga tgg aat gtc aag cgc cat cag				3685
Leu Val Ile Pro Glu Val Gly Ser Arg Trp Asn Val Lys Arg His Gln				
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gac atc acc atc aaa cct gtc ttg tcc ttg ggc cca gct gcc cct ccg				3733
Asp Ile Thr Ile Lys Pro Val Leu Ser Leu Gly Pro Ala Ala Pro Pro				
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Pro Pro Cys Ile Ala Ser Arg Glu Pro Leu Asp His Arg Thr Ser				
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Ser Glu Gln Ala Asp Pro Ser Ala Pro Cys Leu Ala Pro Ser Ser Leu				
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Leu Ser Pro Glu Ala Ser Pro Cys Arg Asn Asp Met Asn Thr Arg Thr				
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Pro Pro Glu Pro Ser Ala Lys Gln Arg Ser Met Arg Cys Tyr Arg Lys				
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Ala Cys Arg Ser Ala Ser Pro Ser Ser Gln Gly Trp Gln Gly Arg Arg				
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Gly Arg Asn Ser Arg Ser Val Ser Ser Gly Ser Asn Arg Thr Ser Glu				
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Arg Ser Pro Ser Pro Arg Arg Arg Ser Asp Arg Arg Arg Arg Tyr Ser	
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Gly Arg Met Thr Arg Ser Glu Leu Lys Gln Arg Phe Ser Val Phe Gly	
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Glu Ile Glu Glu Cys Thr ¹⁵ Ile His Phe Arg Val Gln Gly Asp Asn Tyr	
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Gly Phe Val Thr Tyr Arg Tyr Ala Glu Glu Ala Phe Ala Ala Ile Glu	
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Ser Gly His Lys Leu Arg Gln Ala Asp Glu Gln Pro Phe Asp Leu Cys	
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Phe Gly Gly Arg Arg Gln Phe Cys Lys Arg Ser Tyr Ser Asp Leu Asp	
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Ser Asn Arg Glu Asp Phe Asp Pro Ala Pro Val Lys Ser Lys Phe Asp	
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ctgcctgctt	cttgctccag	cacc	atg	gaa	tgc	ctg	cgc	agt	tta	ccc	tgc				171		
			Met	Glu	Cys	Leu	Arg	Ser	Leu	Pro	Cys						
			1									5					
ctc	ctg	ccc	cgc	gcg	atg	aga	ctt	ccc	cgg	cgg	acg	ctg	tgt	gcc	ctg	219	
Leu	Leu	Pro	Arg	Ala	Met	Arg	Leu	Pro	Arg	Arg	Thr	Leu	Cys	Ala	Leu		
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gcc	ttg	gac	gtg	acc	tct	gtg	ggt	cct	ccc	gtt	gct	gcc	tgc	ggc	cgc	267	
Ala	Leu	Asp	Val	Thr	Ser	Val	Gly	Pro	Pro	Val	Ala	Ala	Cys	Gly	Arg		
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cga	gcc	aac	ctg	att	gga	agg	agc	cga	gcg	gcg	cag	ctt	tgc	ggg	ccc	315	
Arg	Ala	Asn	Leu	Ile	Gly	Arg	Ser	Arg	Ala	Ala	Gln	Leu	Cys	Gly	Pro		
42					47						52					57	
gac	cgg	ctc	cgc	gtg	gca	ggt	gaa	gtg	cac	cgg	ttt	aga	acc	tct	gac	363	
Asp	Arg	Leu	Arg	Val	Ala	Gly	Glu	Val	His	Arg	Phe	Arg	Thr	Ser	Asp		
58					63						68					73	
gtc	tct	caa	gcc	act	tta	gcc	agt	gta	gcc	cca	gta	ttt	act	gtg	aca	411	
Val	Ser	Gln	Ala	Thr	Leu	Ala	Ser	Val	Ala	Pro	Val	Phe	Thr	Val	Thr		
74					79						84					89	
aaa	ttt	gac	aaa	cag	gga	aac	gtt	act	tct	ttt	gaa	agg	aag	aaa	act	459	
Lys	Phe	Asp	Lys	Gln	Gly	Asn	Val	Thr	Ser	Phe	Glu	Arg	Lys	Lys	Thr		
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gaa	tta	tac	caa	gag	tta	ggt	ctt	caa	gcc	aga	gat	ttg	aga	ttt	cag	507	
Glu	Leu	Tyr	Gln	Glu	Leu	Gly	Leu	Gln	Ala	Arg	Asp	Leu	Arg	Phe	Gln		
106					111						116					121	
cat	gta	atg	agt	atc	aca	gtc	aga	aac	aat	agg	att	atc	atg	aga	atg	555	
His	Val	Met	Ser	Ile	Thr	Val	Arg	Asn	Asn	Arg	Ile	Ile	Met	Arg	Met		

122	127	132	137	
gag tat ttg aaa gct gtg ata act cca gag tgt ctt ctg ata tta gat				603
Glu Tyr Leu Lys Ala Val Ile Thr Pro Glu Cys Leu Leu Ile Leu Asp				
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tat cgt aat tta aac tta gag caa tgg ctg ttc cgg gaa ctc cct tca				651
Tyr Arg Asn Leu Asn Leu Glu Gln Trp Leu Phe Arg Glu Leu Pro Ser				
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cag ttg tct gga gag ggt caa ctc gtt aca tac cct tta cct ttt gag				699
Gln Leu Ser Gly Glu Gly Gln Leu Val Thr Tyr Pro Leu Pro Phe Glu				
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Phe Arg Ala Ile Glu Ala Leu Leu Gln Tyr Trp Ile Asn Thr Leu Gln				
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Leu Val Asp Pro Lys His Ser Ser Val Asp Arg Ser Lys Leu His Ile				
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Leu Leu Gln Asn Gly Lys Ser Leu Ser Glu Leu Glu Thr Asp Ile Lys				
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Ile Phe Lys Glu Ser Ile Leu Glu Ile Leu Asp Glu Glu Glu Leu Leu				
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gaa gag ctc tgt gta tca aaa tgg agt gac cca caa gtc ttt gaa aag				987
Glu Glu Leu Cys Val Ser Lys Trp Ser Asp Pro Gln Val Phe Glu Lys				
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Ser Ser Ala Gly Ile Asp His Ala Glu Glu Met Glu Leu Leu Leu Glu				
282	287	292	297	
aac tac tac cga ttg gct gac gat ctc tcc aat gca gct cgt gag ctt				1083
Asn Tyr Tyr Arg Leu Ala Asp Asp Leu Ser Asn Ala Ala Arg Glu Leu				
298	303	308	313	
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Arg Val Leu Ile Asp Asp Ser Gln Ser Ile Ile Phe Ile Asn Leu Asp				
314	319	324	329	
agc cac cga aac gtg atg atg agg ttg aat cta cag ctg acc atg gga				1179
Ser His Arg Asn Val Met Met Arg Leu Asn Leu Gln Leu Thr Met Gly				
330	335	340	345	
acc ttc tct ctt tct ctc ttt gga cta atg gga gtt gct ttt gga atg				1227
Thr Phe Ser Leu Ser Leu Phe Gly Leu Met Gly Val Ala Phe Gly Met				
346	351	356	361	

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 378 383 388 393

tca ttc ctt gga cga cag cta gaa gct cca ttg cct cct atg atg gct 1371
 Ser Phe Leu Gly Arg Gln Leu Glu Ala Pro Leu Pro Pro Met Met Ala
 394 399 404 409

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 Ser Leu Pro Lys Lys Thr Leu Leu Ala Asp Arg Ser Met Glu Leu Lys
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 Asn Ser Leu Arg Leu Asp Gly Leu Gly Ser Gly Arg Ser Ile Leu Thr
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 Met Glu Lys Leu Arg Arg Val Leu Ser Gly Gln
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Gly Val Phe Phe Ser Ile Leu Gly Thr Gly Leu Leu Trp Leu Pro Gly	
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Gly Ile Lys Leu Phe Ala Val Phe Tyr Thr Leu Gly Asn Leu Ala Ala	
60 65 70 75	
tta gcc agt aca tgc ttt tta atg gga cct gtg aag caa ctg aag aaa	351
Leu Ala Ser Thr Cys Phe Leu Met Gly Pro Val Lys Gln Leu Lys Lys	
76 81 86 91	
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Met Phe Glu Ala Thr Arg Leu Leu Ala Thr Ile Val Met Leu Leu Cys	
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Ser Leu Leu Ser *	
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Ser Ala Phe Cys Phe Pro Gly Ser Ser Val Ala Met Asp Met Phe Gln	
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Asp Leu Glu Met Glu Gly Val Pro Ser Thr Ala Ile Arg Glu Ile Ser	
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Leu Leu Lys Glu Leu Lys His Pro Asn Ile Val Arg Leu Leu Asp Val	
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Val His Asn Glu Arg Lys Leu Tyr Leu Val Phe Glu Phe Leu Ser Gln	
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Asp Leu Lys Lys Tyr Met Asp Ser Thr Pro Gly Ser Glu Leu Pro Leu	
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Arg Ile Phe Arg Met Leu Gly Thr Pro Ser Glu Asp Thr Trp Pro Gly	
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Val Thr Gln Leu Pro Asp Tyr Lys Gly Ser Phe Pro Lys Trp Thr Arg	
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Lys Gly Leu Glu Glu Ile Val Pro Asn Leu Glu Pro Glu Gly Arg Asp	
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Leu Leu Met Gln Leu Leu Gln Tyr Asp Pro Ser Gln Arg Ile Thr Ala	
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aag act gcc ctg gcc cac ccg tac ttc tca tcc cct gag ccc tcc cca	1196
Lys Thr Ala Leu Ala His Pro Tyr Phe Ser Ser Pro Glu Pro Ser Pro	
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Ala Ala Arg Gln Tyr Val Leu Gln Arg Phe Arg His *	
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1825

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Met Asp Pro Gly Asn Glu Asn Ser Ala Thr Glu Ala Ala Ile Ile	
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Asp Leu Asp Pro Asp Phe Glu Pro Gln Ser Arg Pro Arg Ser Cys Thr	
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Trp Pro Leu Pro Arg Pro Glu Ile Ala Asn Gln Pro Ser Lys Pro Pro	
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Glu Val Glu Pro Asp Leu Gly Glu Lys Val His Thr Glu Gly Arg Ser	
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Glu Pro Ile Leu Leu Pro Ser Arg Leu Pro Glu Pro Ala Gly Ala Pro	
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Gln Pro Gly Ile Leu Gly Ala Val Thr Gly Pro Arg Lys Gly Gly Ser	
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Arg Arg Asn Ala Trp Gly Asn Gln Ser Tyr Ala Glu Leu Ile Ser Gln	
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His Ser Lys Phe Ile Lys Val His Asn Glu Ala Thr Gly Lys Ser Ser	
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Trp Trp Met Leu Asn Pro Glu Gly Gly Lys Ser Gly Lys Ala Pro Arg	
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Gly Ala Thr Pro Thr Ser Pro Val Gly His Phe Ala Lys Trp Ser Gly	
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Arg Pro Arg Ser Ser Ser Asn Ala Ser Ser Val Ser Thr Arg Leu Ser	
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Pro Leu Arg Pro Glu Ser Glu Val Leu Ala Glu Glu Ile Pro Ala Ser	
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Val Ser Ser Tyr Ala Gly Gly Val Pro Pro Thr Leu Asn Glu Gly Leu	
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Leu Leu Thr Ser Asp Thr Pro Pro Pro Pro Ala Asp Val Leu Met Thr	
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Gln Val Asp Pro Ile Leu Ser Gln Ala Pro Thr Leu Leu Leu Leu Gly	
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Gly Leu Pro Ser Ser Ser Lys Leu Ala Thr Gly Val Gly Leu Cys Pro	
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Leu Gly Thr Pro Val Leu Thr Pro Pro Thr Glu Ala Ala Ser Gln Asp	
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Arg Met Pro Gln Asp Leu Asp Leu Asp Met Tyr Met Glu Asn Leu Glu	
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Cys Asp Met Asp Asn Ile Ile Ser Asp Leu Met Asp Glu Gly Glu Gly	
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 gcggcagaa atg atg gaa gaa ttg cat agc ctg gac cca cga cgg cag 168
 Met Met Glu Glu Leu His Ser Leu Asp Pro Arg Arg Gln
 1 5 10
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agt gat aaa gaa gta gag act ccc gag aaa aag cag aat gac cag cga				312
Ser Asp Lys Glu Val Glu Thr Pro Glu Lys Lys Gln Asn Asp Gln Arg				
46	51	56	61	
aat cgg aaa aga aaa gct gaa cca tat gaa act agc caa ggg aaa ggc				360
Asn Arg Lys Arg Lys Ala Glu Pro Tyr Glu Thr Ser Gln Gly Lys Gly				
62	67	72	77	
act cct agg gga cat aaa att agt gat tac ttt gag cga cga gta gaa				408
Thr Pro Arg Gly His Lys Ile Ser Asp Tyr Phe Glu Arg Arg Val Glu				
78	83	88	93	
cag ccc ctc tat ggt tta gat ggc agt gct gca aag gag gca acg gag				456
Gln Pro Leu Tyr Gly Leu Asp Gly Ser Ala Ala Lys Glu Ala Thr Glu				
94	99	104	109	
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Glu Gln Ser Ala Leu Pro Thr Leu Met Ser Val Met Leu Ala Lys Pro				
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Arg Leu Asp Thr Glu Gln Leu Ala Gln Arg Gly Ala Gly Leu Cys Phe				
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Thr Phe Val Ser Ala Gln Gln Asn Ser Pro Ser Ser Thr Gly Ser Gly				
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Asn Thr Glu His Ser Cys Ser Ser Gln Lys Gln Ile Ser Ile Gln His				
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Arg Gln Thr Gln Ser Asp Leu Thr Ile Glu Lys Ile Ser Ala Leu Glu				
174	179	184	189	
aac agt aag aat tct gac tta gag aag aag gag gga aga ata gat gat				744
Asn Ser Lys Asn Ser Asp Leu Glu Lys Lys Glu Gly Arg Ile Asp Asp				
190	195	200	205	
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Leu Leu Arg Ala Asn Cys Asp Leu Arg Arg Gln Ile Asp Glu Gln Gln				
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aag atg cta gag aaa tac aag gaa cga tta aat aga tgt gtg aca atg				840
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Val Arg His Gly Ala Ser Phe Thr Glu Gln Trp Thr Asp Gly Tyr Ala	
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Phe Gln Asn Leu Ile Lys Gln Gln Glu Arg Ile Asn Ser Gln Arg Glu	
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Leu His Ile Arg Glu Leu Lys Arg Ile His Asn Glu Asp Asn Ser Gln	
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Phe Lys Asp His Pro Thr Leu Asn Asp Arg Tyr Leu Leu Leu His Leu	
398 403 408 413	
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Leu Gly Arg Gly Gly Phe Ser Glu Val Tyr Lys Ala Phe Asp Leu Thr	
414 419 424 429	
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Glu Gln Arg Tyr Val Ala Val Lys Ile His Gln Leu Asn Lys Asn Trp	
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Arg Asp Glu Lys Lys Glu Asn Tyr His Lys His Ala Cys Arg Glu Tyr	
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cgg att cat aaa gag ctg ¹ gat cat ccc aga ata gtt aag ctg tat gat	1560
Arg Ile His Lys Glu Leu ¹ Asp His Pro Arg Ile Val Lys Leu Tyr Asp	
462 467 472 477	

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Tyr Phe Ser Leu Asp Thr Asp Ser Phe Cys Thr Val Leu Glu Tyr Cys	
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Glu Gly Asn Asp Leu Asp Phe Tyr Leu Lys Gln His Lys Leu Met Ser	
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Glu Lys Glu Ala Arg Ser Ile Ile Met Gln Ile Val Asn Ala Leu Lys	
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Tyr Leu Asn Glu Ile Lys Pro Pro Ile Ile His Tyr ⁴ Asp Leu Lys Pro	
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Val Asp Gly Met Glu Leu Thr Ser Gln Gly Ala Gly Thr Tyr Trp Tyr	
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Leu Pro Pro Glu Cys Phe Val Val Gly Lys Glu Pro Pro Lys Ile Ser	
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Pro Val Val Thr Pro Glu Ala Lys Ala Phe Ile Arg Arg Cys Leu Ala	
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Tyr Arg Lys Glu Asp Arg Ile Asp Val Gln Gln Leu Ala Cys Asp Pro	
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Tyr Leu Leu Pro His Ile Arg Lys Ser Val Ser Thr Ser Ser Pro Ala	
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 Asn *
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Met Leu Thr Leu Glu Phe Gly Ile Leu Glu Phe Asp Pro Ser Trp Ile	
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Gly Ser Trp Thr Gln Arg Ser Trp Val Ser Trp Arg Ser Arg Pro Gly	
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Cys Glu Leu Phe Ser Ile Val Val Phe Gly Ser Ile Val Asn Glu Gly	
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Tyr Leu Asn Ser Ala Ser Glu Gly Glu Glu Phe Cys Ile Tyr Asn Arg	
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Leu Thr Cys Leu Leu Tyr Leu Ala Leu Asp Val Tyr Phe Pro Gln Ile	
81 86 91 96	
agc agc gtc aag gac cgc aag aaa gcc gtc ctg tcc gac atc ggt gtc	396
Ser Ser Val Lys Asp Arg Lys Lys Ala Val Leu Ser Asp Ile Gly Val	
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Ser Ala Phe Trp Ala Phe Leu Trp Phe Val Gly Phe Cys Tyr Leu Ala	
113 118 123 128	
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Asn Gln Trp Gln Val Ser Lys Pro Lys Asp Asn Pro Leu Asn Glu Gly	
129 134 139 144	
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Thr Asp Ala Ala Arg Ala Ala Ile Ala Phe Ser Phe Phe Ser Ile Phe	
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Thr Trp Ser Leu Thr Ala Ala Leu Ala Val Arg Arg Phe Lys Asp Leu	
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Ser Phe Gln Glu Glu Tyr Ser Thr Leu Phe Pro Ala Ser Ala Gln Pro	
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193	
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1 5

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Ala Gly Lys Ala Gly Gly Ala Phe Asp Pro Tyr Thr Leu Val Arg Gln
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Pro His Thr Ile Leu Arg Val Val Ser Trp Leu Phe Ser Ile Val Val
24 29 34 39

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Phe Gly Ser Ile Val Asn Glu Gly Tyr Leu Asn Ser Ala Ser Glu Gly
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Glu Glu Phe Cys Ile Tyr Asn Arg Asn Pro Asn Ala Cys Ser Tyr Gly
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Val Ala Val Gly Val Leu Ala Phe Leu Thr Cys Leu Leu Tyr Leu Ala
72 77 82 87

ctg gac gtg tac ttc ccg cag atc agc agc gtc aag gac cgc aag aaa 401
Leu Asp Val Tyr Phe Pro Gln Ile Ser Ser Val Lys Asp Arg Lys Lys
88 93 98 103

gcc gtc ctg tcc gac atc ggt gtc tcg gcc ttc tgg gct ttc ctc tgg 449
Ala Val Leu Ser Asp Ile Gly Val Ser Ala Phe Trp Ala Phe Leu Trp
104 109 114 119

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136 141 146 151

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gcc gtg cgg aga ttc aag gac cta agc ttc cag gag gag tac agc aca	641
Ala Val Arg Arg Phe Lys Asp Leu Ser Phe Gln Glu Glu Tyr Ser Thr	
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Leu Phe Pro Ala Ser Ala Gln Pro *	
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Met Leu Thr Leu Glu Phe Gly Ile Leu Glu Phe Asp Pro Ser Trp Ile	
1 5 10 15	
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Gly Ser Trp Thr Gln Arg Ser Trp Leu Phe Ser Ile Val Val Phe Gly	
17 22 27 32	
tcc atc gtg aac gag ggc tac ctc aac agc gcc tcc gag ggg gag gag	204
Ser Ile Val Asn Glu Gly Tyr Leu Asn Ser Ala Ser Glu Gly Glu Glu	
33 38 43 48	
ttc tgc atc tac aac cgc aac ccc aac gcc tgc agc tat ggc gtg gcc	252
Phe Cys Ile Tyr Asn Arg Asn Pro Asn Ala Cys Ser Tyr Gly Val Ala	
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Val Gly Val Leu Ala Phe Leu Thr Cys Leu Leu Tyr Leu Ala Leu Asp	
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Val Tyr Phe Pro Gln Ile Ser Ser Val Lys Asp Arg Lys Lys Ala Val	
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Leu Ser Asp Ile Gly Val Ser Ala Phe Trp Ala Phe Leu Trp Phe Val	
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gga ttc tgc tac ctg gcc aac cag tgg cag gtc tcc aag ccc aag gac	444
Gly Phe Cys Tyr Leu Ala Asn Gln Trp Gln Val Ser Lys Pro Lys Asp	
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Asn Pro Leu Asn Glu Gly Thr Asp Ala Ala Arg Ala Ala Ile Ala Phe	
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Ser Phe Phe Ser Ile Phe Thr Trp Ser Leu Thr Ala Ala Leu Ala Val	
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Arg Arg Phe Lys Asp Leu Ser Phe Gln Glu Glu Tyr Ser Thr Leu Phe	
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Pro Ala Ser Ala Gln Pro *	
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ggtcgtcaga cccgctgccc ttggcggctcg aagtcgtcgt gcggggcccg ggcggccgcc      180
c   atg gag aag gcc agg aga ggc ggg gat ggc gtc ccc cgg ggg ccc      226
    Met Glu Lys Ala Arg Arg Gly Gly Asp Gly Val Pro Arg Gly Pro
      1             5             10

gta ctg cac atc gtg gtg gtc gga ttt cac cac aag aag ggc tgc cag      274
Val Leu His Ile Val Val Val Gly Phe His His Lys Lys Gly Cys Gln
  16             21             26             31

gtt gaa ttc tct tac ccg ccc ctg att cca gga gat gga cat gac agc      322
Val Glu Phe Ser Tyr Pro Pro Leu Ile Pro Gly Asp Gly His Asp Ser
  32             37             42             47

cac act tta cct gaa gaa tgg aag tat ttg ccc ttc ctt gcc tta cca      370
His Thr Leu Pro Glu Glu Trp Lys Tyr Leu Pro Phe Leu Ala Leu Pro
  48             53             58             63

gat ggc gca cac aac tac cag gaa gat act gtg ttt ttt cac ttg cca      418
Asp Gly Ala His Asn Tyr Gln Glu Asp Thr Val Phe Phe His Leu Pro
  64             69             74             79

ccc aga aat gga aat gga gcc aca gta ttt ggt atc tct tgc tat cga      466
Pro Arg Asn Gly Asn Gly Ala Thr Val Phe Gly Ile Ser Cys Tyr Arg
  80             85             90             95

caa att gaa gcc aag gca ctg aaa gta agg caa gca gat atc acc aga      514
Gln Ile Glu Ala Lys Ala Leu Lys Val Arg Gln Ala Asp Ile Thr Arg
  96             101            106            111

gag act gtt cag aaa agt gtc tgt gtt cta agc aag ctg cct ctg tat      562
Glu Thr Val Gln Lys Ser Val Cys Val Leu Ser Ser Lys Leu Pro Leu Tyr
 112            117            122            127

ggt tta ctt cag gca aaa ctt caa ctc att aca cat gca tat ttt gaa      610
Gly Leu Leu Gln Ala Lys Leu Gln Leu Ile Thr His Ala Tyr Phe Glu
 128            133            138            143

gag aag gat ttt tcc caa att tct att cta aag gag ctt tat gaa cat      658
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Met Asn Ser Ser Leu Gly Gly Ala Ser Leu Glu Gly Ser Gln Val Tyr	
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Leu Gly Leu Ser Pro Arg Asp Leu Val Leu His Phe Arg His Lys Val	
176 181 186 191	
tta atc cta ttt aag cta att ctt ctt gaa aaa aag gtt ctt ttt tat	802
Leu Ile Leu Phe Lys Leu Ile Leu Leu Glu Lys Lys Val Leu Phe Tyr	
192 197 202 207	
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Ile Ser Pro Val Asn Lys Leu Val Gly Ala Leu Met Thr Val Leu Ser	
208 213 218 223	
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Leu Phe Pro Gly Met Ile Glu His Gly Leu Ser Asp Cys Ser Gln Tyr	
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Arg Pro Arg Lys Ser Met Ser Glu Asp Gly Gly Leu Gln Glu Ser Asn	
240 245 250 255	
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Pro Cys Ala Asp Asp Phe Val Ser Ala Ser Thr Ala Asp Val Ser His	
256 261 266 271	
acc aac ttg gga act atc agg aaa gtc atg gca gga aac cat gga gaa	1042
Thr Asn Leu Gly Thr Ile Arg Lys Val Met Ala Gly Asn His Gly Glu	
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agc aaa ggg cag gaa ccc aat gat acc aat caa tat ttg aaa cct cca	1138
Ser Lys Gly Gln Glu Pro Asn Asp Thr Asn Gln Tyr Leu Lys Pro Pro	
304 309 314 319	
tct cgc cca tct cca gat tct tca gaa agt gac tgg gaa act ttg gat	1186
Ser Arg Pro Ser Pro Asp Ser Ser Glu Ser Asp Trp Glu Thr Leu Asp	
320 325 330 335	
cct agt gtc tta gag gac ccc aac ttg aaa gaa agg gaa cag ctg gga	1234
Pro Ser Val Leu Glu Asp Pro Asn Leu Lys Glu Arg Glu Gln Leu Gly	
336 341 346 351	
tca gac cag aca aat ttg ttt cca aag gac tct gtc ccc tca gag agt	1282
Ser Asp Gln Thr Asn Leu Phe Pro Lys Asp Ser Val Pro Ser Glu Ser	
352 357 362 367	
ctt cca att act gta caa cct caa gct aat acg gga cag gta gtc ctg	1330
Leu Pro Ile Thr Val Gln Pro Gln Ala Asn Thr Gly Gln Val Val Leu	

368	373	378	383	
ata cca ggg ctc att	tcg ggt ttg gaa gag	gat cag tat ggc atg ccc		1378
Ile Pro Gly Leu Ile	Ser Gly Leu Glu Glu	Asp Gln Tyr Gly Met Pro		
384	389	394	399	
ctg gcc atc ttc aca	aag gga tat ctg tgt	ttg cct tac atg gca ttg		1426
Leu Ala Ile Phe Thr	Lys Gly Tyr Leu Cys	Leu Pro Tyr Met Ala Leu		
400	405	410	415	
cag cag cat cat ctt	ctc tcc gat gtc acc	gtt cgg ggg ttt gtt gct		1474
Gln Gln His His Leu	Leu Ser Asp Val Thr	Val Arg Gly Phe Val Ala		
416	421	426	431	
gga gct act aac atc	ctt ttt cga caa cag	aaa cac ctc agt gat gcc		1522
Gly Ala Thr Asn Ile	Leu Phe Arg Gln Gln	Lys His Leu Ser Asp Ala		
432	437	442	447	
att gtg gaa gta gaa	gaa gct ctg atc cag	atc cat gat cca gaa ctc		1570
Ile Val Glu Val Glu	Glu Ala Leu Ile Gln	Ile His Asp Pro Glu Leu		
448	453	458	463	
agg aag ctg ctt aac	cca acc act gca gac	cta agg ttc gca gac tac		1618
Arg Lys Leu Leu Asn	Pro Thr Thr Ala Asp	Leu Arg Phe Ala Asp Tyr		
464	469	474	479	
cta gtg agg cac gtg	act gag aat cgg gat	gac gtc ttc cta gat ggc		1666
Leu Val Arg His Val	Thr Glu Asn Arg Asp	Asp Val Phe Leu Asp Gly		
480	485	490	495	
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Thr Gly Trp Glu Gly	Gly Asp Glu Trp Ile	Arg Ala Gln Phe Ala Val		
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tac att cat gcc ctg	ctg gct gcc acg ctg	caa tta gtt ctg ttc aga		1762
Tyr Ile His Ala Leu	Leu Ala Ala Thr Leu	Gln Leu Val Leu Phe Arg		
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ata gtg aac gtg gca	aaa aaa att gga aac	gtc atg gtc aca act agc		1810
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cgg aat gtt gta caa	aca gga aaa gct gtt	ggc cag tca gtt gga gga		1858
Arg Asn Val Val Gln	Thr Gly Lys Ala Val	Gly Gln Ser Val Gly Gly		
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Ala Phe Ser Ser Ala	Lys Thr Ala Met Ser	Ser Trp Leu Ser Thr Phe		
560	565	570	575	
acc act tcc acc tcc	caa agt ctc act gag	cca cca gat gag aag cct		1954
Thr Thr Ser Thr Ser	Gln Ser Leu Thr Glu	Pro Pro Asp Glu Lys Pro		
576	581	586	591	
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592				

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1 5 10

cta aaa tgc cat ttc acc tgg aac ttg atg gag gga gaa aac tcc ttg 274
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16 21 26 31

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32 37 42 47

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48 53 58 63

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64 69 74 79

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80 85 90 95

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Thr Trp Gly Asn Tyr Ala Trp Val Tyr Tyr His Met Gly Arg Leu Ser
96 101 106 111

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112 117 122 127

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Ser Ser Pro Tyr Arg Ile Glu Ser Pro Glu Leu Asp Cys Glu Glu Gly
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Trp Thr Arg Leu Lys Cys Gly Gly Asn Gln Asn Glu Arg Ala Lys Val
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Leu Lys Ser Cys Glu Glu Phe Met Lys Thr Trp Arg Lys Tyr Asp Thr	
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Asp His Ser Gly Phe Ile Glu Thr Glu Glu Leu Lys Asn Phe Leu Lys	
113 118 123 128	
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Asp Leu Leu Glu Lys Ala Asn Lys Thr Val Asp Asp Thr Lys Leu Ala	
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Glu Tyr Thr Asp Leu Met Leu Lys Leu Phe Asp Ser Asn Asn Asp Gly	
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Lys Leu Glu Leu Thr Glu Met Ala Arg Leu Leu Pro Val Gln Glu Asn	
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Phe Leu Leu Lys Phe Gln Gly Ile Lys Met Cys Gly Lys Glu Phe Asn	
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Cys Ala Gly Asp Asn *	
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Glu Asn Leu Cys Arg Gln Ser Gly Leu Asn Arg Asp Val Gly Ser Leu						
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Asp Phe Glu Asp Leu Pro Leu Tyr Lys Glu Lys Leu Glu Val Tyr Phe						
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Ser Pro Gly His Phe Ala His Gly Ser Asp Arg Arg Met Val Arg Leu						
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Glu Asp Leu Phe Gln Arg Phe Pro Arg Thr Pro Met Ser Val Glu Ile						
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Lys Arg Phe Ser Cys Phe Ser Leu Pro Ser Ser Trp Asp Tyr Arg Thr						
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Pro Arg Cys Pro Cys Pro Ser Gln *						

177

182

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 Met Arg Arg Leu
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 Ile Cys Lys Arg Ile Cys Asp Tyr Lys Ser Phe Asp Asp Glu Glu Ser
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 21 26 31 36

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 Ala Pro Lys Thr Ser Gly Asn Pro Ala Asn Ser Ala Arg Lys Pro Gly
 37 42 47 52

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 Ser Ala Gly Gly Pro Lys Val Gly Ala Gly Ala Ser Lys Glu Gly Gly
 53 58 63 68

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1135

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Ser Gln Asn Thr Leu Ser Pro Ser Ala Phe Asp Tyr Asp Thr Glu Asn				
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 cgacctgcgg cggtccggg tgactcgggc cagtgtagag gtccctcaggc cgccggcagg 180
 agcagctggg ccaattccct ggccgggagc ggaagggg atg gcg tcg ggc ctg 233
 Met Ala Ser Gly Leu
 1
 ggc tcc ccg tcc ccc tgc tcg gcg ggc agt gag gag gag gat atg gat 281
 Gly Ser Pro Ser Pro Cys Ser Ala Gly Ser Glu Glu Glu Asp Met Asp
 6 11 16 21
 gca ctt ttg aac aac agc ctg ccc cca ccc cac cca gaa aat gaa gag 329
 Ala Leu Leu Asn Asn Ser Leu Pro Pro Pro His Pro Glu Asn Glu Glu
 22 27 32 37
 gac cca gaa gag gat ttg tca gaa aca gag act cca aag ctc aag aag 377
 Asp Pro Glu Glu Asp Leu Ser Glu Thr Glu Thr Pro Lys Leu Lys Lys
 38 43 48 53
 aag aaa aag cct aag aaa cct cgg gac cct aaa atc cct aag agc aag /
 Lys Lys Lys Pro Lys Lys Pro Arg Asp Pro Lys Ile Pro Lys Ser Lys 425
 54 59 64 69

cgc caa aaa aag gag cgt atg ctc tta tgc cgg cag ctg ggg gac agc Arg Gln Lys Lys Glu Arg Met Leu Leu Cys Arg Gln Leu Gly Asp Ser 70 75 80 85	473
tct ggg gag ggg cca gag ttt gtg gag gag gag gaa gag gtg gct ctg Ser Gly Glu Gly Pro Glu Phe Val Glu Glu Glu Glu Glu Val Ala Leu 86 91 96 101	521
cgc tca gac agt gag ggc agc gac tat act cct ggc aag aag aag aag Arg Ser Asp Ser Glu Gly Ser Asp Tyr Thr Pro Gly Lys Lys Lys Lys 102 107 112 117	569
aag aag ctt gga cct aag aaa gag aag aag agc aaa tcc aag cgg aag Lys Lys Leu Gly Pro Lys Lys Glu Lys Lys Ser Lys Ser Lys Arg Lys 118 123 128 133	617
gag gag gag gag gag gat gat gat gat gat gat tca aag gag cct aaa Glu Glu Glu Glu Glu Asp Asp Asp Asp Asp Asp Ser Lys Glu Pro Lys 134 139 144 149	665
tca tct gct cag ctc ctg gaa gac tgg ggc atg gaa gac att gac cac Ser Ser Ala Gln Leu Leu Glu Asp Trp Gly Met Glu Asp Ile Asp His 150 155 160 165	713
gtg ttc tca gag gag gat tat cga acc ctc acc aac tac aag gcc ttc Val Phe Ser Glu Glu Asp Tyr Arg Thr Leu Thr Asn Tyr Lys Ala Phe 166 171 176 181	761
agc cag ttt gtc aga ccc ctc att gct gcc aaa aat ccc aag att gct Ser Gln Phe Val Arg Pro Leu Ile Ala Ala Lys Asn Pro Lys Ile Ala 182 187 192 197	809
gtc tcc aag atg atg atg gtt ttg ggt gca aaa tgg cgg gag ttc agt Val Ser Lys Met Met Met Val Leu Gly Ala Lys Trp Arg Glu Phe Ser 198 203 208 213	857
acc aat aac ccc ttc aaa ggc agt tct ggg gca tca gtg gca gct gcg Thr Asn Asn Pro Phe Lys Gly Ser Ser Gly Ala Ser Val Ala Ala Ala 214 219 224 229	905
gca gca gca gcg gta gct gtg gtg gag agc atg gtg aca gcc act gag Ala Ala Ala Ala Val Ala Val Val Glu Ser Met Val Thr Ala Thr Glu 230 235 240 245	953
gtt gca cca cca cct ccc cct gtg gag gtg cct atc cgc aag gcc aag Val Ala Pro Pro Pro Pro Pro Val Glu Val Pro Ile Arg Lys Ala Lys 246 251 256 261	1001
acc aag gag ggc aaa ggt ccc aat gct cgg agg aag ccc aag ggc agc Thr Lys Glu Gly Lys Gly Pro Asn Ala Arg Arg Lys Pro Lys Gly Ser 262 267 272 277	1049
cct cgt gta cct gat gcc aag aag cct aaa ccc aag aaa gta gct ccc Pro Arg Val Pro Asp Ala Lys Lys Pro Lys Pro Lys Lys Val Ala Pro 278 283 288 293	1097

ctg aaa atc aag ctg gga ggt ttt ggt tcc aag cgt aag aga tcc tcg	1145
Leu Lys Ile Lys Leu Gly Gly Phe Gly Ser Lys Arg Lys Arg Ser Ser	
294 299 304 309	
agt gag gat gat gac tta gat gtg gaa tct gac ttc gat gat gcc agt	1193
Ser Glu Asp Asp Asp Leu Asp Val Glu Ser Asp Phe Asp Asp Ala Ser	
310 315 320 325	
atc aat agc tat tct gtt tct gat ggt tcc acc agc cgt agt agc cgc	1241
Ile Asn Ser Tyr Ser Val Ser Asp Gly Ser Thr Ser Arg Ser Ser Arg	
326 331 336 341	
agc cgc aag aaa ctc cga acc act aaa aag aaa aaa ggc gag gag	1289
Ser Arg Lys Lys Leu Arg Thr Thr Lys Lys Lys Lys Lys Gly Glu Glu	
342 347 352 357	
gag gtg act gct gtg gat ggt tat gag aca gac cac cag gac tat tgc	1337
Glu Val Thr Ala Val Asp Gly Tyr Glu Thr Asp His Gln Asp Tyr Cys	
358 363 368 373	
gag gtg tgc cag caa ggc ggt gag atc atc ctg tgt gat acc tgt ccc	1385
Glu Val Cys Gln Gln Gly Gly Glu Ile Ile Leu Cys Asp Thr Cys Pro	
374 379 384 389	
cgt gct tac cac atg gtc tgc ctg gat ccc gac atg gag aag gct ccc	1433
Arg Ala Tyr His Met Val Cys Leu Asp Pro Asp Met Glu Lys Ala Pro	
390 395 400 405	
gag ggc aag tgg agc tgc cca cac tgc gag aag gaa ggc atc cag tgg	1481
Glu Gly Lys Trp Ser Cys Pro His Cys Glu Lys Glu Gly Ile Gln Trp	
406 411 416 421	
gaa gct aaa gag gac aat tcg gag ggt gag gag atc ctg gaa gag gtt	1529
Glu Ala Lys Glu Asp Asn Ser Glu Gly Glu Glu Ile Leu Glu Glu Val	
422 427 432 437	
ggg gga gac ctc gaa gag gag gat gac cac cat atg gaa ttc tgt cgg	1577
Gly Gly Asp Leu Glu Glu Glu Asp Asp His His Met Glu Phe Cys Arg	
438 443 448 453	
gtc tgc aag gat ggt ggg gaa ctg ctc tgc tgt gat acc tgt cct tct	1625
Val Cys Lys Asp Gly Gly Glu Leu Leu Cys Cys Asp Thr Cys Pro Ser	
454 459 464 469	
tcc tac cac atc cac tgc ctg aat ccc cca ctt cca gag atc ccc aac	1673
Ser Tyr His Ile His Cys Leu Asn Pro Pro Leu Pro Glu Ile Pro Asn	
470 475 480 485	
ggt gaa tgg ctc tgt ccc cgt tgt acg tgt cca gct ctg aag ggc aaa	1721
Gly Glu Trp Leu Cys Pro Arg Cys Thr Cys Pro Ala Leu Lys Gly Lys	
486 491 496 501	
gtg cag aag atc cta atc tgg aag tgg ggt cag cca cca tct ccc aca	1769
Val Gln Lys Ile Leu Ile Trp Lys Trp Gly Gln Pro Pro Ser Pro Thr	
502 507 512 517	
cca gtg cct cgg cct cca gat gct gat ccc aac acg ccc tcc cca aag	1817

Pro Val Pro Arg Pro Pro Asp Ala Asp Pro Asn Thr Pro Ser Pro Lys	
518 523 528 533	
ccc ttg gag ggg cgg cca gag cgg cag ttc ttt gtg aaa tgg caa ggc	1865
Pro Leu Glu Gly Arg Pro Glu Arg Gln Phe Phe Val Lys Trp Gln Gly	
534 539 544 549	
atg tct tac tgg cac tgc tcc tgg gtt tct gaa ctg cag ctg gag ctg	1913
Met Ser Tyr Trp His Cys Ser Trp Val Ser Glu Leu Gln Leu Glu Leu	
550 555 560 565	
cac tgt cag gtg atg ttc cga aac tat cag cgg aag aat gat atg gat	1961
His Cys Gln Val Met Phe Arg Asn Tyr Gln Arg Lys Asn Asp Met Asp	
566 571 576 581	
gag cca cct tct ggg gac ttt ggt ggt gat gaa gag aaa agc cga aag	2009
Glu Pro Pro Ser Gly Asp Phe Gly Gly Asp Glu Glu Lys Ser Arg Lys	
582 587 592 597	
cga aag aac aag gac cct aaa ttt gca gag atg gag gaa cgc ttc tat	2057
Arg Lys Asn Lys Asp Pro Lys Phe Ala Glu Met Glu Glu Arg Phe Tyr	
598 603 608 613	
cgc tat ggg ata aaa ccc gag tgg atg atg atc cac cga atc ctc aac	2105
Arg Tyr Gly Ile Lys Pro Glu Trp Met Met Ile His Arg Ile Leu Asn	
614 619 624 629	
cac agt gtg gac aag aag ggc cac gtc cac tac ttg atc aag tgg cgg	2153
His Ser Val Asp Lys Lys Gly His Val His Tyr Leu Ile Lys Trp Arg	
630 635 640 645	
gac tta cct tac gat cag gct tct tgg gag agt gag gat gtg gag atc	2201
Asp Leu Pro Tyr Asp Gln Ala Ser Trp Glu Ser Glu Asp Val Glu Ile	
646 651 656 661	
cag gat tac gac ctg ttc aag cag agc tat tgg aat cac agg gag tta	2249
Gln Asp Tyr Asp Leu Phe Lys Gln Ser Tyr Trp Asn His Arg Glu Leu	
662 667 672 677	
atg agg ggt gag gaa ggc cga cca ggc aag aag ctc aag aag gtg aag	2297
Met Arg Gly Glu Glu Gly Arg Pro Gly Lys Lys Leu Lys Lys Val Lys	
678 683 688 693	
ctt cgg aag ttg gag agg cct cca gaa acg cca aca gtt gat cca aca	2345
Leu Arg Lys Leu Glu Arg Pro Pro Glu Thr Pro Thr Val Asp Pro Thr	
694 699 704 709	
gtg aag tat gag cga cac gca gag tac ctg gat gct aca ggt gga acc	2393
Val Lys Tyr Glu Arg His Ala Glu Tyr Leu Asp Ala Thr Gly Gly Thr	
710 715 720 725	
ctg cac ccc tat caa atg gag ggc ctg aat tgg ttg cgc ttc tcc tgg	2441
Leu His Pro Tyr Gln Met Glu Gly Leu Asn Trp Leu Arg Phe Ser Trp	
726 731 736 741	
gct cag ggc act gac acc atc ttg gct gat gag atg ggc ctt ggg aaa	2489
Ala Gln Gly Thr Asp Thr Ile Leu Ala Asp Glu Met Gly Leu Gly Lys	

742	747	752	757	
act gta cag aca gca gtc ttc ctg tat tcc ctt tac aag gag ggt cat				2537
Thr Val Gln Thr Ala Val Phe Leu Tyr Ser Leu Tyr Lys Glu Gly His				
758	763	768	773	
tcc aaa ggc ccc ttc cta gtg agc gcc cct ctt tct acc atc atc aac				2585
Ser Lys Gly Pro Phe Leu Val Ser Ala Pro Leu Ser Thr Ile Ile Asn				
774	779	784	789	
tgg gag cgg gag ttt gaa atg tgg gct cca gac atg tat gtc gta acc				2633
Trp Glu Arg Glu Phe Glu Met Trp Ala Pro Asp Met Tyr Val Val Thr				
790	795	800	805	
tat gtg ggt gac aag gac agc cgt gcc atc atc cga gag aat gag ttc				2681
Tyr Val Gly Asp Lys Asp Ser Arg Ala Ile Ile Arg Glu Asn Glu Phe				
806	811	816	821	
tcc ttt gaa gac aat gcc att cgt ggt ggc aag aag gcc tcc cgc atg				2729
Ser Phe Glu Asp Asn Ala Ile Arg Gly Gly Lys Lys Ala Ser Arg Met				
822	827	832	837	
aag aaa gag gca tct gtg aaa ttc cat gtg ctg ctg aca tcc tat gaa				2777
Lys Lys Glu Ala Ser Val Lys Phe His Val Leu Leu Thr Ser Tyr Glu				
838	843	848	853	
ttg atc acc att gac atg gct att ttg ggc tct att gat tgg gcc tgc				2825
Leu Ile Thr Ile Asp Met Ala Ile Leu Gly Ser Ile Asp Trp Ala Cys				
854	859	864	869	
ctc atc gtg gat gaa gcc cat cgg ctg aag aac aat cag tct aag ttc				2873
Leu Ile Val Asp Glu Ala His Arg Leu Lys Asn Asn Gln Ser Lys Phe				
870	875	880	885	
ttc cgg gta ttg aat ggt tac tca ctc cag cac aag ctg ttg ctg act				2921
Phe Arg Val Leu Asn Gly Tyr Ser Leu Gln His Lys Leu Leu Leu Thr				
886	891	896	901	
ggg aca cca tta caa aac aat ctg gaa gag ttg ttt cat ctg ctc aac				2969
Gly Thr Pro Leu Gln Asn Asn Leu Glu Glu Leu Phe His Leu Leu Asn				
902	907	912	917	
ttt ctc acc ccc gag agg ttc cac aat ttg gaa ggt ttt ttg gag gag				3017
Phe Leu Thr Pro Glu Arg Phe His Asn Leu Glu Gly Phe Leu Glu Glu				
918	923	928	933	
ttt gct gac att gcc aag gag gac cag ata aaa aaa ctg cat gac atg				3065
Phe Ala Asp Ile Ala Lys Glu Asp Gln Ile Lys Lys Leu His Asp Met				
934	939	944	949	
ctg ggg ccg cac atg ttg cgg cgg ctc aaa gcc gat gtg ttc aag aac				3113
Leu Gly Pro His Met Leu Arg Arg Leu Lys Ala Asp Val Phe Lys Asn				
950	955	960	965	
atg ccc tcc aag aca gaa cta att gtg cgt/gtg gag ctg agc cct atg				3161
Met Pro Ser Lys Thr Glu Leu Ile Val Arg Val Glu Leu Ser Pro Met				
966	971	976	981	

cag aag aaa tac tac aag tac atc ctc act cga aat ttt gaa gca ctc	3209
Gln Lys Lys Tyr Tyr Lys Tyr Ile Leu Thr Arg Asn Phe Glu Ala Leu	
982 987 992 997	
aat gcc cga ggt ggt ggc aac cag gtg tct ctg ctg aat gtg gtg atg	3257
Asn Ala Arg Gly Gly Gly Asn Gln Val Ser Leu Leu Asn Val Val Met	
998 1003 1008 1013	
gat ctt aag aag tgc tgc aac cat cca tac ctc ttc cct gtg gct gca	3305
Asp Leu Lys Lys Cys Cys Asn His Pro Tyr Leu Phe Pro Val Ala Ala	
1014 1019 1024 1029	
atg gaa gct cct aag atg cct aat ggc atg tat gat ggc agt gcc cta	3353
Met Glu Ala Pro Lys Met Pro Asn Gly Met Tyr Asp Gly Ser Ala Leu	
1030 1035 1040 1045	
atc aga gca tct ggg aaa tta ttg ctg ctg cag aaa atg ctc aag aac	3401
Ile Arg Ala Ser Gly Lys Leu Leu Leu Leu Gln Lys Met Leu Lys Asn	
1046 1051 1056 1061	
ctt aag gag ggt ggg cat cgt gta ctc atc ttt tcc cag atg acc aag	3449
Leu Lys Glu Gly Gly His Arg Val Leu Ile Phe Ser Gln Met Thr Lys	
1062 1067 1072 1077	
atg cta gac ctg cta gag gat ttc ttg gaa cat gaa ggt tat aaa tac	3497
Met Leu Asp Leu Leu Glu Asp Phe Leu Glu His Glu Gly Tyr Lys Tyr	
1078 1083 1088 1093	
gaa cgc atc gat ggt gga atc act ggg aac atg cgg caa gag gcc att	3545
Glu Arg Ile Asp Gly Gly Ile Thr Gly Asn Met Arg Gln Glu Ala Ile	
1094 1099 1104 1109	
gac cgc ttc aat gca ccg ggt gct cag cag ttc tgc ttc ttg ctt tcc	3593
Asp Arg Phe Asn Ala Pro Gly Ala Gln Gln Phe Cys Phe Leu Leu Ser	
1110 1115 1120 1125	
act cga gct ggg ggc ctt gga atc aat ctg gcc act gct gac aca gtt	3641
Thr Arg Ala Gly Gly Leu Gly Ile Asn Leu Ala Thr Ala Asp Thr Val	
1126 1131 1136 1141	
att atc tat gac tct gac tgg aac ccc cat aat gac att cag gcc ttt	3689
Ile Ile Tyr Asp Ser Asp Trp Asn Pro His Asn Asp Ile Gln Ala Phe	
1142 1147 1152 1157	
agc aga gct cac cgg att ggg caa aat aaa aag gta atg atc tac cgg	3737
Ser Arg Ala His Arg Ile Gly Gln Asn Lys Lys Val Met Ile Tyr Arg	
1158 1163 1168 1173	
ttt gtg acc cgt gcg tca gtg gag gag cgc atc acg cag gtg gca aag	3785
Phe Val Thr Arg Ala Ser Val Glu Glu Arg Ile Thr Gln Val Ala Lys	
1174 1179 1184 1189	
aag aaa atg atg ctg acg cat cta gtg gtg cgg cct ggg ctg ggc tcc	3833
Lys Lys Met Met Leu Thr His Leu Val Val Arg Pro Gly Leu Gly Ser	
1190 1195 1200 1205	

aag act gga tct atg tcc aaa cag gag ctt gat gat atc ctc aaa ttt	3881
Lys Thr Gly Ser Met Ser Lys Gln Glu Leu Asp Asp Ile Leu Lys Phe	
1206 1211 1216 1221	
ggc act gag gaa cta ttc aag gat gaa gcc act gat gga gga gga gac	3929
Gly Thr Glu Glu Leu Phe Lys Asp Glu Ala Thr Asp Gly Gly Gly Asp	
1222 1227 1232 1237	
aac aaa gag gga gaa gat agc agt gtt atc cac tac gat gat aag gcc	3977
Asn Lys Glu Gly Glu Asp Ser Ser Val Ile His Tyr Asp Asp Lys Ala	
1238 1243 1248 1253	
att gaa cgg ctg cta gac cgt aac cag gat gag act gaa gac aca gaa	4025
Ile Glu Arg Leu Leu Asp Arg Asn Gln Asp Glu Thr Glu Asp Thr Glu	
1254 1259 1264 1269	
ttg cag ggc atg aat gaa tat ttg agc tca ttc aaa gtg gcc cag tat	4073
Leu Gln Gly Met Asn Glu Tyr Leu Ser Ser Phe Lys Val Ala Gln Tyr	
1270 1275 1280 1285	
gtg gta cgg gaa gaa gaa atg ggg gag gaa gag gag gta gaa cgg gaa	4121
Val Val Arg Glu Glu Glu Met Gly Glu Glu Glu Glu Val Glu Arg Glu	
1286 1291 1296 1301	
atc att aaa cag gaa gaa agt gtg gat cct gac tac tgg gag aaa ttg	4169
Ile Ile Lys Gln Glu Glu Ser Val Asp Pro Asp Tyr Trp Glu Lys Leu	
1302 1307 1312 1317	
ctg cgg cac cat tat gag cag cag caa gaa gat cta gcc cga aat ctg	4217
Leu Arg His His Tyr Glu Gln Gln Gln Glu Asp Leu Ala Arg Asn Leu	
1318 1323 1328 1333	
ggc aaa gga aaa aga atc cgt aaa cag gtc aac tac aat gat ggc tcc	4265
Gly Lys Gly Lys Arg Ile Arg Lys Gln Val Asn Tyr Asn Asp Gly Ser	
1334 1339 1344 1349	
cag gag gac cga gat tgg cag gac gac cag tcc gac aac cag tcc gat	4313
Gln Glu Asp Arg Asp Trp Gln Asp Asp Gln Ser Asp Asn Gln Ser Asp	
1350 1355 1360 1365	
tac tca gtg gct tca gag gaa ggt gat gaa gac ttt gat gaa cgt tca	4361
Tyr Ser Val Ala Ser Glu Glu Gly Asp Glu Asp Phe Asp Glu Arg Ser	
1366 1371 1376 1381	
gaa gct ccc cgt agg ccc agt cgt aag ggc ctg cgg aat gat aaa gat	4409
Glu Ala Pro Arg Arg Pro Ser Arg Lys Gly Leu Arg Asn Asp Lys Asp	
1382 1387 1392 1397	
aag cca ttg cct cct ctg ttg gcc cgt gtt ggt ggg aat att gaa gta	4457
Lys Pro Leu Pro Pro Leu Leu Ala Arg Val Gly Gly Asn Ile Glu Val	
1398 1403 1408 1413	
ctt ggt ttt aat gct cgt cag cga aaa gcc ttt ctt aat gca att atg	4505
Leu Gly Phe Asn Ala Arg Gln Arg Lys Ala Phe Leu Asn Ala Ile Met	
1414 1419 1424 1429	
cga tat ggt atg cca cct cag gat gct ttt act acc cag tgg ctt gta	4553

Arg Tyr Gly Met Pro Pro Gln Asp Ala Phe Thr Thr Gln Trp Leu Val	
1430	1435 1440 1445
aga gac ctg cga ggc aaa tca gag aaa gag ttc aag gca tat gtc tct	4601
Arg Asp Leu Arg Gly Lys Ser Glu Lys Glu Phe Lys Ala Tyr Val Ser	
1446	1451 1456 1461
ctt ttc atg cgg cat tta tgt gag ccg ggg gca gat ggg gct gag acc	4649
Leu Phe Met Arg His Leu Cys Glu Pro Gly Ala Asp Gly Ala Glu Thr	
1462	1467 1472 1477
ttt gct gat ggt gtc ccc cga gaa ggc ctg tct cgc cag cat gtc ctt	4697
Phe Ala Asp Gly Val Pro Arg Glu Gly Leu Ser Arg Gln His Val Leu	
1478	1483 1488 1493
act aga att ggt gtt atg tct ttg att cgc aag aag gtt cag gag ttt	4745
Thr Arg Ile Gly Val Met Ser Leu Ile Arg Lys Lys Val Gln Glu Phe	
1494	1499 1504 1509
gaa cat gtt aat ggg cgc tgg agc atg cct gaa ctg gct gag gtg gag	4793
Glu His Val Asn Gly Arg Trp Ser Met Pro Glu Leu Ala Glu Val Glu	
1510	1515 1520 1525
gaa aac aag aag atg tcc cag cca ggg tca ccc tcc cca aaa act cct	4841
Glu Asn Lys Lys Met Ser Gln Pro Gly Ser Pro Ser Pro Lys Thr Pro	
1526	1531 1536 1541
aca ccc tcc act cca ggg gac acg cag ccc aac act cct gca cct gtc	4889
Thr Pro Ser Thr Pro Gly Asp Thr Gln Pro Asn Thr Pro Ala Pro Val	
1542	1547 1552 1557
cca cct gct gaa gat ggg ata aaa ata gag gaa aat agc ctc aaa gaa	4937
Pro Pro Ala Glu Asp Gly Ile Lys Ile Glu Glu Asn Ser Leu Lys Glu	
1558	1563 1568 1573
gaa gag agc ata gaa gga gaa aag gag gtt aaa tct aca gcc cct gag	4985
Glu Glu Ser Ile Glu Gly Glu Lys Glu Val Lys Ser Thr Ala Pro Glu	
1574	1579 1584 1589
act gcc att gag tgt aca cag gcc cct gcc cct gcc tca gag gat gaa	5033
Thr Ala Ile Glu Cys Thr Gln Ala Pro Ala Pro Ala Ser Glu Asp Glu	
1590	1595 1600 1605
aag gtc gtt gtt gaa ccc cct gag gga gag gag aaa gtg gaa aag gca	5081
Lys Val Val Val Glu Pro Pro Glu Gly Glu Glu Lys Val Glu Lys Ala	
1606	1611 1616 1621
gag gtg aag gag aga aca gag gaa cct atg gag aca gag ccc aaa ggt	5129
Glu Val Lys Glu Arg Thr Glu Glu Pro Met Glu Thr Glu Pro Lys Gly	
1622	1627 1632 1637
gct gct gat gta gag aag gtg gag gaa aag tca gca ata gat ctg acc	5177
Ala Ala Asp Val Glu Lys Val Glu Glu Lys Ser Ala Ile Asp Leu Thr	
1638	1643 1648 1653
cct att gtg gta gaa gac aaa gaa gag aag aaa gaa gaa gaa gag aaa	5225
Pro Ile Val Val Glu Asp Lys Glu Glu Lys Lys Glu Glu Glu Glu Lys	

1654	1659	1664	1669	
aaa gag gtg atg ctt cag aat gga gag acc ccc aag gac ctg aat gat				5273
Lys Glu Val Met Leu Gln Asn Gly Glu Thr Pro Lys Asp Leu Asn Asp				
1670	1675	1680	1685	
gag aaa cag aag aaa aat att aaa caa cgt ttc atg ttt aac att gca				5321
Glu Lys Gln Lys Lys Asn Ile Lys Gln Arg Phe Met Phe Asn Ile Ala				
1686	1691	1696	1701	
gat ggt ggt ttt act gag ttg cac tcc ctt tgg cag aat gaa gag cgg				5369
Asp Gly Gly Phe Thr Glu Leu His Ser Leu Trp Gln Asn Glu Glu Arg				
1702	1707	1712	1717	
gca gcc aca gtt acc aag aag act tat gag atc tgg cat cga cgg cat				5417
Ala Ala Thr Val Thr Lys Lys Thr Tyr Glu Ile Trp His Arg Arg His				
1718	1723	1728	1733	
gac tac tgg ctg cta gcc ggc att ata aac cat ggc tat gcc cgg tgg				5465
Asp Tyr Trp Leu Leu Ala Gly Ile Ile Asn His Gly Tyr Ala Arg Trp				
1734	1739	1744	1749	
caa gac atc cag aat gac cca cgc tat gcc atc ctc aat gag cct ttc				5513
Gln Asp Ile Gln Asn Asp Pro Arg Tyr Ala Ile Leu Asn Glu Pro Phe				
1750	1755	1760	1765	
aag ggt gaa atg aac cgt ggc aat ttc tta gag atc aag aat aaa ttt				5561
Lys Gly Glu Met Asn Arg Gly Asn Phe Leu Glu Ile Lys Asn Lys Phe				
1766	1771	1776	1781	
cta gct cga agg ttt aag ctc tta gaa caa gct ctg gtg att gag gaa				5609
Leu Ala Arg Arg Phe Lys Leu Leu Glu Gln Ala Leu Val Ile Glu Glu				
1782	1787	1792	1797	
cag ctg cgc cgg gct gct tac ttg aac atg tca gaa gac cct tct cac				5657
Gln Leu Arg Arg Ala Ala Tyr Leu Asn Met Ser Glu Asp Pro Ser His				
1798	1803	1808	1813	
cct tcc atg gcc ctc aac acc cgc ttt gct gag gtg gag tgt ttg gcg				5705
Pro Ser Met Ala Leu Asn Thr Arg Phe Ala Glu Val Glu Cys Leu Ala				
1814	1819	1824	1829	
gaa agt cat cag cac ctg tcc aag gag tca atg gca gga aac aag cca				5753
Glu Ser His Gln His Leu Ser Lys Glu Ser Met Ala Gly Asn Lys Pro				
1830	1835	1840	1845	
gcc aat gca gtc ctg cac aaa gtt ctg aaa cag ctg gaa gaa ctg ctg				5801
Ala Asn Ala Val Leu His Lys Val Leu Lys Gln Leu Glu Glu Leu Leu				
1846	1851	1856	1861	
agt gac atg aaa gct gat gtg act cga ctc cca gct acc att gcc cga				5849
Ser Asp Met Lys Ala Asp Val Thr Arg Leu Pro Ala Thr Ile Ala Arg				
1862	1867	1872	1877	
att ccc cca gtt gct gtg agg tta cag atg tca gag cgt aac att ctc				5897
Ile Pro Pro Val Ala Val Arg Leu Gln Met Ser Glu Arg Asn Ile Leu				
1878	1883	1888	1893	

agc cgc ctg gca aac cgg gca ccc gaa cct acc cca cag cag gta gcc 5945
 Ser Arg Leu Ala Asn Arg Ala Pro Glu Pro Thr Pro Gln Gln Val Ala
 1894 1899 1904 1909

cag cag cag tga aga tgcagactga taccacctcc accgctgagc agtgaccttc 6000
 Gln Gln Gln *
 1910

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Glu	Arg	Val	Val	Pro	Pro	Pro	Lys	Lys	Arg	Arg	Thr	Gly	Val	Ser	Phe	
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Gly	Asp	Glu	His	Phe	Ala	Glu	Thr	Ser	Tyr	Tyr	Phe	Glu	Gly	Gly	Leu	
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Arg	Lys	Val	Arg	Pro	Tyr	Tyr	Phe	Asp	Phe	Arg	Thr	Tyr	Cys	Lys	Gly	
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Arg	Trp	Val	Gly	His	Ser	Leu	Leu	His	Val	Phe	Ser	Thr	Glu	Phe	Arg	
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Gln Lys Ala Gln Val Asn Thr Ser Asp Leu Asn Glu Glu Leu Gly Gln
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Val Glu Tyr Val Phe Thr Asp Lys Thr Gly Thr Leu Thr Glu Asn Glu
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Asn Gly Arg Leu Val Pro Glu Gly Pro Thr Pro Asp Ser Ser Glu Gly
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Asn Leu Ser Tyr Leu Ser Ser Leu Ser His Leu Asn Asn Leu Ser His
87 92 97 102

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Leu Ile Lys Glu His Asp Leu Phe Phe Lys Ala Val Ser Leu Cys His	
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Trp Gln Ser Asn Leu Ala Pro Ser Gln Leu Glu Tyr Tyr Ala Ser Ser	
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Phe Ala Lys Gly Ala Glu Ser Ser Ile Leu Pro Lys Cys Ile Gly Gly	
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Phe Val His Gly His Phe Tyr Tyr Ile Arg Ile Ala Thr Leu Val Gln	
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177 182 187 192	
att cgt gca atg aga gga caa gtc gac tac agc aaa atc atg aac ggc	864
Ile Arg Ala Met Arg Gly Gln Val Asp Tyr Ser Lys Ile Met Asn Gly	
193 198 203 208	
aat ctg tct gct gaa ata gaa agg ttc agt gcc atg ttc cag gaa aag	912
Asn Leu Ser Ala Glu Ile Glu Arg Phe Ser Ala Met Phe Gln Glu Lys	
209 214 219 224	
aag cag gaa gta cag act gca att tta agg gtt gat cag ctt agt cag	960
Lys Gln Glu Val Gln Thr Ala Ile Leu Arg Val Asp Gln Leu Ser Gln	
225 230 235 240	
caa ttg gaa gat tta aag aaa gga aaa ctg aat ggg ttc cag tct tac	1008
Gln Leu Glu Asp Leu Lys Lys Gly Lys Leu Asn Gly Phe Gln Ser Tyr	
241 246 251 256	
aat ggc aaa ttg acg gga cca gcg gcg gtg gag tta aaa aga ctg tac	1056
Asn Gly Lys Leu Thr Gly Pro Ala Ala Val Glu Leu Lys Arg Leu Tyr	
257 262 267 272	
caa gaa cta cag att cgt aac caa ctt aac cag gaa caa aat tca aaa	1104
Gln Glu Leu Gln Ile Arg Asn Gln Leu Asn Gln Glu Gln Asn Ser Lys	
273 278 283 288	
ctt cag cag cag aag gaa ctc tta aat aag cgc aac atg gag gtg gcc	1152
Leu Gln Gln Gln Lys Glu Leu Leu Asn Lys Arg Asn Met Glu Val Ala	
289 294 299 304	
atg atg gac aag cga atc agt gaa ctg cgt gaa cgt ctc tat ggg aaa	1200
Met Met Asp Lys Arg Ile Ser Glu Leu Arg Glu Arg Leu Tyr Gly Lys	
305 310 315 320	
aaa att cag ctg aac cgt gtg aat ggc acg tca tca cca cag tcc cct	1248
Lys Ile Gln Leu Asn Arg Val Asn Gly Thr Ser Ser Pro Gln Ser Pro	
321 326 331 336	

ctg agc aca tcg ggc agg gtc gct gct gtg ggg cct tat atc cag gtt	1296
Leu Ser Thr Ser Gly Arg Val Ala Ala Val Gly Pro Tyr Ile Gln Val	
337 342 347 352	
ccc agt gcc gga agc ttt cct gtg ctg ggg gac cct ata aag ccc cag	1344
Pro Ser Ala Gly Ser Phe Pro Val Leu Gly Asp Pro Ile Lys Pro Gln	
353 358 363 368	
tct ctg agt att gcc tca aat gct gct cat gga aga tcc aaa tcc gct	1392
Ser Leu Ser Ile Ala Ser Asn Ala Ala His Gly Arg Ser Lys Ser Ala	
369 374 379 384	
aat gat gga aac tgg cca aca tta aaa cag aat tct agc tct tcc gtg	1440
Asn Asp Gly Asn Trp Pro Thr Leu Lys Gln Asn Ser Ser Ser Ser Val	
385 390 395 400	
aaa cca gtg cag gtg gcc ggt gca gac tgg aag gat ccg agc gtg gag	1488
Lys Pro Val Gln Val Ala Gly Ala Asp Trp Lys Asp Pro Ser Val Glu	
401 406 411 416	
ggg tct gtc aag cag ggc act gtc tcc agc cag cct gtg ccc ttc tca	1536
Gly Ser Val Lys Gln Gly Thr Val Ser Ser Gln Pro Val Pro Phe Ser	
417 422 427 432	
gca ctg gga ccc acg gag aag ccg ggc atc gag att ggt aaa gtg cca	1584
Ala Leu Gly Pro Thr Glu Lys Pro Gly Ile Glu Ile Gly Lys Val Pro	
433 438 443 448	
cct ccc atc ccg ggt gta ggc aag cag ctg cct cca agc tat ggg aca	1632
Pro Pro Ile Pro Gly Val Gly Lys Gln Leu Pro Pro Ser Tyr Gly Thr	
449 454 459 464	
tac cca agt cct aca cct ctg ggt cct ggg tcg aca agc tcc ctg gaa	1680
Tyr Pro Ser Pro Thr Pro Leu Gly Pro Gly Ser Thr Ser Ser Leu Glu	
465 470 475 480	
agg agg aag gaa ggc agc ttg ccc agg ccc agt gca ggc ctg cca agt	1728
Arg Arg Lys Glu Gly Ser Leu Pro Arg Pro Ser Ala Gly Leu Pro Ser	
481 486 491 496	
cga cag agg ccc acc ctg ctg ccc gcc aca ggc agc acc ccc cag cca	1776
Arg Gln Arg Pro Thr Leu Leu Pro Ala Thr Gly Ser Thr Pro Gln Pro	
497 502 507 512	
ggc tcc tca caa cag att cag cag agg att tcc gta ccg cca agt ccc	1824
Gly Ser Ser Gln Gln Ile Gln Gln Arg Ile Ser Val Pro Pro Ser Pro	
513 518 523 528	
acg tac ccg cca gcg gga cca cct gca ttt cca gct ggg gac agc aag	1872
Thr Tyr Pro Pro Ala Gly Pro Pro Ala Phe Pro Ala Gly Asp Ser Lys	
529 534 539 544	
cct gaa ctg cca ctg aca gtg gcc att agg cct ttc ctg gct gat aaa	1920
Pro Glu Leu Pro Leu Thr Val Ala Ile Arg Pro Phe Leu Ala Asp Lys	
545 550 555 560	
ggg tca agg cca cag tct ccc agg aaa gga ccc cag aca gtg aat tca	1968

Gly Ser Arg Pro Gln Ser Pro Arg Lys Gly Pro Gln Thr Val Asn Ser	
561 566 571 576	
agt tcc ata tac tcc atg tac ctc cag caa gcc aca cca cct aag aat	2016
Ser Ser Ile Tyr Ser Met Tyr Leu Gln Gln Ala Thr Pro Pro Lys Asn	
577 582 587 592	
tac cag ccg gca gca cac agc gcc tta aat aag tca gtt aaa gca gtg	2064
Tyr Gln Pro Ala Ala His Ser Ala Leu Asn Lys Ser Val Lys Ala Val	
593 598 603 608	
tat ggt aag ccc gtt tta cct tcg ggt tca acc tct cca tcg ccg ctg	2112
Tyr Gly Lys Pro Val Leu Pro Ser Gly Ser Thr Ser Pro Ser Pro Leu	
609 614 619 624	
ccg ttt ctt cac ggg tca ctg tcc acg ggc aca cca cag cct cag cca	2160
Pro Phe Leu His Gly Ser Leu Ser Thr Gly Thr Pro Gln Pro Gln Pro	
625 630 635 640	
cct tca gaa agt act gag aaa gag cct gag cag gat ggc ccc gcc gcc	2208
Pro Ser Glu Ser Thr Glu Lys Glu Pro Glu Gln Asp Gly Pro Ala Ala	
641 646 651 656	
ccc gca gat ggc agc acc gtg gag agc ctg cca cgg cca ctc agc ccc	2256
Pro Ala Asp Gly Ser Thr Val Glu Ser Leu Pro Arg Pro Leu Ser Pro	
657 662 667 672	
acc aag ctc acg ccc atc gtg cat tcg cca ctg cgc tac cag agt gat	2304
Thr Lys Leu Thr Pro Ile Val His Ser Pro Leu Arg Tyr Gln Ser Asp	
673 678 683 688	
gca gac ctg gag gcc ctc cgc agg aag ctg gcc aac gcg ccc cgg ccc	2352
Ala Asp Leu Glu Ala Leu Arg Arg Lys Leu Ala Asn Ala Pro Arg Pro	
689 694 699 704	
ctg aaa aag cgc agc tcc atc aca gag ccc gag ggc ccc ggc ggg ccc	2400
Leu Lys Lys Arg Ser Ser Ile Thr Glu Pro Glu Gly Pro Gly Gly Pro	
705 710 715 720	
aac atc cag aag ctg ctg tac cag cgc ttc aac acc ctg gcc ggt ggc	2448
Asn Ile Gln Lys Leu Leu Tyr Gln Arg Phe Asn Thr Leu Ala Gly Gly	
721 726 731 736	
atg gag ggc acc cct ttc tac cag ccc agc ccc tcc cag gac ttc atg	2496
Met Glu Gly Thr Pro Phe Tyr Gln Pro Ser Pro Ser Gln Asp Phe Met	
737 742 747 752	
ggc acc ttg gcc gat gtg gac aat gga aac acc aat gcc aat gga aac	2544
Gly Thr Leu Ala Asp Val Asp Asn Gly Asn Thr Asn Ala Asn Gly Asn	
753 758 763 768	
ctg gaa gag ctc ccc cct gcc cag ccc aca gcc cca ctc ccc gct gag	2592
Leu Glu Glu Leu Pro Pro Ala Gln Pro Thr Ala Pro Leu Pro Ala Glu	
769 774 779 784	
cct gcc ccg tca tca gat gcc aat gat aat gag tta cct tcc ccc gaa	2640
Pro Ala Pro Ser Ser Asp Ala Asn Asp Asn Glu Leu Pro Ser Pro Glu	

Pro Gly Ser Ser Pro Ser Gln Val Leu Ser Ala Ala Thr Ile Val Ala	
88 93 98 103	
aag cac acg tca gcc ttg tgt aat gcc tgc cgc atc gcc tca tcc aag	509
Lys His Thr Ser Ala Leu Cys Asn Ala Cys Arg Ile Ala Ser Ser Lys	
104 109 114 119	
acg gcc aac cca gta gcc aag agg cac ttc gtc cag tcg gcc aag gaa	557
Thr Ala Asn Pro Val Ala Lys Arg His Phe Val Gln Ser Ala Lys Glu	
120 125 130 135	
gtc gcc aac agc act gcc aac ctg gtg aag acc atc aag gcc ctg gat	605
Val Ala Asn Ser Thr Ala Asn Leu Val Lys Thr Ile Lys Ala Leu Asp	
136 141 146 151	
ggg gat ttc tct gaa gac aac cgc aat aag tgt cgc atc gcc acc gca	653
Gly Asp Phe Ser Glu Asp Asn Arg Asn Lys Cys Arg Ile Ala Thr Ala	
152 157 162 167	
ccc ttg att gaa gct gtg gag aac ctg aca gcg ttc gcc tca aac cct	701
Pro Leu Ile Glu Ala Val Glu Asn Leu Thr Ala Phe Ala Ser Asn Pro	
168 173 178 183	
gag ttt gtc agc att cct gcc cag atc agc tcc gag ggt tcc cag gca	749
Glu Phe Val Ser Ile Pro Ala Gln Ile Ser Ser Glu Gly Ser Gln Ala	
184 189 194 199	
cag gaa cca atc ctg gtc tca gcc aag acc atg ctg gag agt tca tcg	797
Gln Glu Pro Ile Leu Val Ser Ala Lys Thr Met Leu Glu Ser Ser Ser	
200 205 210 215	
tac ctc att cgc act gca cgc tct ctg gcc atc aac ccc aaa gac cca	845
Tyr Leu Ile Arg Thr Ala Arg Ser Leu Ala Ile Asn Pro Lys Asp Pro	
216 221 226 231	
ccc acc tgg tct gta ctg gct gga cat tcc cat aca gtg tcc gac tcc	893
Pro Thr Trp Ser Val Leu Ala Gly His Ser His Thr Val Ser Asp Ser	
232 237 242 247	
atc aag agt ctc atc act tct atc agg gac aag gcc cct gga cag agg	941
Ile Lys Ser Leu Ile Thr Ser Ile Arg Asp Lys Ala Pro Gly Gln Arg	
248 253 258 263	
gag tgt gat tac tcc atc gat ggc atc aac cgg tgc atc cgg gac atc	989
Glu Cys Asp Tyr Ser Ile Asp Gly Ile Asn Arg Cys Ile Arg Asp Ile	
264 269 274 279	
gag cag gcc tcg ctg gcc gcc gtc agc cag agc ctg gcc acg agg gac	1037
Glu Gln Ala Ser Leu Ala Ala Val Ser Gln Ser Leu Ala Thr Arg Asp	
280 285 290 295	
gac atc tct gtg gag gcc ctg cag gag cag ctg act tcg gtg gtc cag	1085
Asp Ile Ser Val Glu Ala Leu Gln Glu Gln Leu Thr Ser Val Val Gln	
296 301 306 311	
gaa atc gga cac ctt atc gat ccc atc gcc aca gcg gct cgg gga gaa	1133
Glu Ile Gly His Leu Ile Asp Pro Ile Ala Thr Ala Ala Arg Gly Glu	

312	317	322	327	
gca gct cag ctg gga cat aag gtg aca caa ctg gca agc tat ttt gag				1181
Ala Ala Gln Leu Gly His Lys Val Thr Gln Leu Ala Ser Tyr Phe Glu				
328	333	338	343	
ccc ttg atc tta gcc gca gtt ggt gtg gcc tcc aag att ctt gat cat				1229
Pro Leu Ile Leu Ala Ala Val Gly Val Ala Ser Lys Ile Leu Asp His				
344	349	354	359	
cag cag cag atg acg gtg ctg gac cag acc aag act ctc gca gag tct				1277
Gln Gln Gln Met Thr Val Leu Asp Gln Thr Lys Thr Leu Ala Glu Ser				
360	365	370	375	
gcc ttg cag atg ttg tat gca gcc aaa gaa ggt ggc gga aac ccc aag				1325
Ala Leu Gln Met Leu Tyr Ala Ala Lys Glu Gly Gly Gly Asn Pro Lys				
376	381	386	391	
gca caa cac acc cat gac gcc atc aca gag gcc gcc cag ttg atg aag				1373
Ala Gln His Thr His Asp Ala Ile Thr Glu Ala Ala Gln Leu Met Lys				
392	397	402	407	
gaa gcc gtg gat gac atc atg gtg acg ctg aac gaa gct gcc agt gaa				1421
Glu Ala Val Asp Asp Ile Met Val Thr Leu Asn Glu Ala Ala Ser Glu				
408	413	418	423	
gtg ggg ctg gtt ggg ggc atg gtg gac gcc att gca gaa gcc atg agc				1469
Val Gly Leu Val Gly Gly Met Val Asp Ala Ile Ala Glu Ala Met Ser				
424	429	434	439	
aag ctg gat gaa ggc act cct cca gaa cca aag gga aca ttt gtc gac				1517
Lys Leu Asp Glu Gly Thr Pro Pro Glu Pro Lys Gly Thr Phe Val Asp				
440	445	450	455	
tat cag acg act gtg gtt aaa tac tcc aaa agc att gcg gtg aca gct				1565
Tyr Gln Thr Thr Val Val Lys Tyr Ser Lys Ser Ile Ala Val Thr Ala				
456	461	466	471	
cag gaa atg atg act aag tgc gtt act aac ccg gag gag ttg gga gga				1613
Gln Glu Met Met Thr Lys Ser Val Thr Asn Pro Glu Glu Leu Gly Gly				
472	477	482	487	
ctg gct tca caa atg acc agt gac tat ggg cac ctg gct ttc cag ggc				1661
Leu Ala Ser Gln Met Thr Ser Asp Tyr Gly His Leu Ala Phe Gln Gly				
488	493	498	503	
cag atg gca gca gcc acg gcg gaa cca gag gag atc gga ttc cag att				1709
Gln Met Ala Ala Ala Thr Ala Glu Pro Glu Glu Ile Gly Phe Gln Ile				
504	509	514	519	
cgc act cgt gtg cag gac ctg ggc cac ggc tgt atc ttc ctg gtg cag				1757
Arg Thr Arg Val Gln Asp Leu Gly His Gly Cys Ile Phe Leu Val Gln				
520	525	530	535	
aag gca ggg gcc ctc cag gtc tgc ccc aca gac agc tac acc aag agg				1805
Lys Ala Gly Ala Leu Gln Val Cys Pro Thr Asp Ser Tyr Thr Lys Arg				
536	541	546	551	

gag ctg atc gaa tgc gcc cgt gcc gtc acg gaa aag gtc tcc ttg gtg	1853
Glu Leu Ile Glu Cys Ala Arg Ala Val Thr Glu Lys Val Ser Leu Val	
552 557 562 567	
ctc tcg gct ctc cag gcc ggg aac aaa gga acc cag gca tgc att aca	1901
Leu Ser Ala Leu Gln Ala Gly Asn Lys Gly Thr Gln Ala Cys Ile Thr	
568 573 578 583	
gcc gcc acc gct gtg tct ggg atc att gcc gac ctg gac acc acc att	1949
Ala Ala Thr Ala Val Ser Gly Ile Ile Ala Asp Leu Asp Thr Thr Ile	
584 589 594 599	
atg ttt gca aca gcg ggg acg ctg aat gca gag aac agt gag acc ttc	1997
Met Phe Ala Thr Ala Gly Thr Leu Asn Ala Glu Asn Ser Glu Thr Phe	
600 605 610 615	
gca gac cac agg gag aac att ctc aag acg gcc aag gcc ttg gta gaa	2045
Ala Asp His Arg Glu Asn Ile Leu Lys Thr Ala Lys Ala Leu Val Glu	
616 621 626 631	
gac acg aaa cta ctt gtg tca gga gct gcg tcc act cct gac aag ctg	2093
Asp Thr Lys Leu Leu Val Ser Gly Ala Ala Ser Thr Pro Asp Lys Leu	
632 637 642 647	
gcc cag gcg gcc cag tcc tca gca gcc acc atc acc cag ctc gca gaa	2141
Ala Gln Ala Ala Gln Ser Ser Ala Ala Thr Ile Thr Gln Leu Ala Glu	
648 653 658 663	
gtg gtc aag ctg ggg gca gcc agc ctg ggc tcc gac gac ccc gag acc	2189
Val Val Lys Leu Gly Ala Ala Ser Leu Gly Ser Asp Asp Pro Glu Thr	
664 669 674 679	
cag gtg gtt ttg atc aat gcc atc aaa gat gtg gcc aag gcc ctt tct	2237
Gln Val Val Leu Ile Asn Ala Ile Lys Asp Val Ala Lys Ala Leu Ser	
680 685 690 695	
gat ctc atc agt gct acc aag gga gct gcc agc aag cca gtg gac gac	2285
Asp Leu Ile Ser Ala Thr Lys Gly Ala Ala Ser Lys Pro Val Asp Asp	
696 701 706 711	
cct tcc atg tac cag ctc aag ggg gct gcc aag gtg atg gtg acc aat	2333
Pro Ser Met Tyr Gln Leu Lys Gly Ala Ala Lys Val Met Val Thr Asn	
712 717 722 727	
gtc acc tcg ctc ctc aag act gta aag gca gtg gag gat gag gcc acc	2381
Val Thr Ser Leu Leu Lys Thr Val Lys Ala Val Glu Asp Glu Ala Thr	
728 733 738 743	
cgg ggc acc agg gcg ctt gag gcc aca att gaa tgc ata aag cag gag	2429
Arg Gly Thr Arg Ala Leu Glu Ala Thr Ile Glu Cys Ile Lys Gln Glu	
744 749 754 759	
ctt acg gtg ttc cag tca aaa gac gta cct gaa aag aca tca tca cct	2477
Leu Thr Val Phe Gln Ser Lys Asp Val Pro Glu Lys Thr Ser Ser Pro	/
760 765 770 775	

gaa gaa tcc ata agg atg acg aaa ggc atc acc atg gca aca gcc aaa	2525
Glu Glu Ser Ile Arg Met Thr Lys Gly Ile Thr Met Ala Thr Ala Lys	
776 781 786 791	
gcc gtg gca gct ggg aac tca tgt aga cag gag gac gtg att gct act	2573
Ala Val Ala Ala Gly Asn Ser Cys Arg Gln Glu Asp Val Ile Ala Thr	
792 797 802 807	
gcc aac ctg agc cgg aaa gcc gtg tca gat atg ttg acg gct tgc aag	2621
Ala Asn Leu Ser Arg Lys Ala Val Ser Asp Met Leu Thr Ala Cys Lys	
808 813 818 823	
caa gca tcc ttc cac ccc gat gtc agt gac gag gtg aga acc aga gcc	2669
Gln Ala Ser Phe His Pro Asp Val Ser Asp Glu Val Arg Thr Arg Ala	
824 829 834 839	
ttg cgt ttc ggg acg gag tgc acc ctt ggc tac ttg gac ctc ctg gag	2717
Leu Arg Phe Gly Thr Glu Cys Thr Leu Gly Tyr Leu Asp Leu Leu Glu	
840 845 850 855	
cac gtc ttg gtg att ctt cag aaa cca acc cca gaa ttc aag cag cag	2765
His Val Leu Val Ile Leu Gln Lys Pro Thr Pro Glu Phe Lys Gln Gln	
856 861 866 871	
ctg gcc gct ttc tcc aag cga gtc gcc ggc gct gtg aca gag ctc atc	2813
Leu Ala Ala Phe Ser Lys Arg Val Ala Gly Ala Val Thr Glu Leu Ile	
872 877 882 887	
cag gcg gcg gaa gcc atg aaa gga aca gag tgg gtg gat cca gaa gac	2861
Gln Ala Ala Glu Ala Met Lys Gly Thr Glu Trp Val Asp Pro Glu Asp	
888 893 898 903	
cca act gtc att gca gaa aca gag tta ctg ggg gct gca gca tcc atc	2909
Pro Thr Val Ile Ala Glu Thr Glu Leu Leu Gly Ala Ala Ala Ser Ile	
904 909 914 919	
gaa gct gct gct aag aag tta gag caa ctg aag cca aga gca aaa cca	2957
Glu Ala Ala Ala Lys Lys Leu Glu Gln Leu Lys Pro Arg Ala Lys Pro	
920 925 930 935	
aaa caa gcg gat gag acc ctg gac ttt gag gaa cag atc ttg gaa gct	3005
Lys Gln Ala Asp Glu Thr Leu Asp Phe Glu Glu Gln Ile Leu Glu Ala	
936 941 946 951	
gct aaa tcc att gct gct gcc aca agc gcc ctg gtc aaa tcg gcc tca	3053
Ala Lys Ser Ile Ala Ala Ala Thr Ser Ala Leu Val Lys Ser Ala Ser	
952 957 962 967	
gca gcc cag agg gag ctg gtg gcc caa gga aag gtg ggc tcc atc cct	3101
Ala Ala Gln Arg Glu Leu Val Ala Gln Gly Lys Val Gly Ser Ile Pro	
968 973 978 983	
gcc aat gct gca gac gac gga cag tgg tca cag ggg ctg att tct gct	3149
Ala Asn Ala Ala Asp Asp Gly Gln Trp Ser Gln Gly Leu Ile Ser Ala	
984 989 / 994 999	
gcc cgg atg gtg gcg gct gcg acc agc agt ctc tgt gag gcg gcc aat	3197

Ala Arg Met Val Ala Ala Ala Thr Ser Ser Leu Cys Glu Ala Ala Asn	
1000 1005 1010 1015	
gcc tcc gtt cag gga cac gcc agc gag gag aag ctc atc tca tct gcc	3245
Ala Ser Val Gln Gly His Ala Ser Glu Glu Lys Leu Ile Ser Ser Ala	
1016 1021 1026 1031	
aag cag gtc gcc gct tcc acg gct cag ctg ctg gtg gcc tgc aag gtg	3293
Lys Gln Val Ala Ala Ser Thr Ala Gln Leu Leu Val Ala Cys Lys Val	
1032 1037 1042 1047	
aag gcc gac cag gat tca gag gcc atg agg cgg cta cag gcg gca gga	3341
Lys Ala Asp Gln Asp Ser Glu Ala Met Arg Arg Leu Gln Ala Ala Gly	
1048 1053 1058 1063	
aat gct gtg aaa aga gcc tca gac aat ctt gtc cgt gca gcc cag aag	3389
Asn Ala Val Lys Arg Ala Ser Asp Asn Leu Val Arg Ala Ala Gln Lys	
1064 1069 1074 1079	
gca gct ttt ggc aaa gct gat gac gac gat gtt gta gtg aaa acc aag	3437
Ala Ala Phe Gly Lys Ala Asp Asp Asp Asp Val Val Val Lys Thr Lys	
1080 1085 1090 1095	
ttt gtg ggg ggc att gct cag atc atc gcc gcc cag gaa gaa atg cta	3485
Phe Val Gly Gly Ile Ala Gln Ile Ile Ala Ala Gln Glu Glu Met Leu	
1096 1101 1106 1111	
aag aaa gag cga gaa ctg gaa gaa gca agg aaa aaa ctg gcc caa atc	3533
Lys Lys Glu Arg Glu Leu Glu Glu Ala Arg Lys Lys Leu Ala Gln Ile	
1112 1117 1122 1127	
cgc cag cag cag tat aag ttt tta ccc acc gag ctg agg gaa gat gag	3581
Arg Gln Gln Gln Tyr Lys Phe Leu Pro Thr Glu Leu Arg Glu Asp Glu	
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ggc taa aggtgcgagc ccagatggcg agccccaggg gatggccctg gctgaactgg	3637
Gly *	
1144	
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Lys Asp Arg Ser Lys Gly Val Lys Asp Pro Glu Ala Arg Glu Leu Ile	216	221	226	231
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Tyr Glu Val Val Pro Cys His Ser Asp Cys Asn Gln Tyr Leu Trp Val	
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Ser Ser Trp Ser Leu Cys Gln Leu Thr Cys Val Asn Gly Glu Asp Leu				
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Gly Phe Gly Gly Ile Gln Val Arg Ser Arg Pro Val Ile Ile Gln Glu				
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Cys Tyr Asp Gly Gln Cys Tyr Glu Tyr Lys Trp Met Ala Ser Ala Trp				
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Lys Gly Ser Ser Arg Thr Val Trp Cys Gln Arg Ser Asp Gly Ile Asn				
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Val Thr Gly Gly Cys Leu Val Met Ser Gln Pro Asp Ala Asp Arg Ser				
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Cys Asn Pro Pro Cys Ser Gln Pro His Ser Tyr Cys Ser Glu Thr Lys				
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Gln Pro Ser Ser Asn Pro Ala Gly Arg Gly Arg Thr Trp Phe Leu Gln				
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Pro Phe Gly Pro Asp Gly Arg Leu Lys Thr Trp Val Tyr Gly Val Ala				
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gct ggg gca ttt gtg tta ctc atc ttt att gtc tcc atg att tat cta				4947
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Gln Gly Asp Glu Arg Asp Met Gln Leu Ile Ala Leu Glu Gln Leu Cys	
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Met Leu Leu Leu Met Ser Asp Asn Val Asp Arg Cys Phe Glu Thr Cys	
33 38 43 48	
cct cct cgc act ttc tta cca gcc ctt tgc aaa att ttt ctt gat gaa	192
Pro Pro Arg Thr Phe Leu Pro Ala Leu Cys Lys Ile Phe Leu Asp Glu	
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Ser Ala Pro Asp Asn Val Leu Glu Val Thr Ala Arg Ala Ile Thr Tyr	
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Tyr Leu Asp Val Ser Ala Glu Cys Thr Arg Arg Ile Val Gly Val Asp	
81 86 91 96	
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Gly Ala Ile Lys Ala Leu Cys Asn Arg Leu Val Val Val Glu Leu Asn	
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Asn Arg Thr Ser Arg Asp Leu Ala Glu Gln Cys Val Lys Val Leu Glu	
113 118 123 128	
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Leu Ile Cys Thr Arg Glu Ser Gly Ala Val Phe Glu Ala Gly Gly Leu	
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Asn Cys Val Leu Thr Phe Ile Arg Asp Ser Gly His Leu Val His Lys	
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Asp Thr Leu His Ser Ala Met Ala Val Val Ser Arg Leu Cys Gly Lys	
161 166 171 176	
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Met Glu Pro Gln Asp Ser Ser Leu Glu Ile Cys Val Glu Ser Leu Ser	

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Ser Leu Leu Lys His	Glu Asp His Gln Val Ser Asp Gly Ala Leu Arg			
193	198	203	208	
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Cys Phe Ala Ser Leu Ala Asp Arg Phe Thr Arg Arg Gly Val Asp Pro				
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Ala Pro Leu Ala Lys His Gly Leu Thr Glu Glu Leu Leu Ser Arg Met				
225	230	235	240	
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Ala Ala Ala Gly Gly Thr Val Ser Gly Pro Ser Ser Ala Cys Lys Pro				
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Gly Arg Ser Thr Thr Gly Ala Pro Ser Thr Thr Ala Asp Ser Lys Leu				
257	262	267	272	
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Ser Asn Gln Val Ser Thr Ile Asp Leu Leu Arg Ser Glu Leu Pro Asp				
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Ser Ile Glu Ser Ala Leu Gln Gly Asp Glu Arg Cys Val Leu Asp Thr				
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Met Arg Leu Val Asp Leu Leu Leu Val Leu Leu Phe Glu Gly Arg Lys				
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337	342	347	352	
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Cys Ile Arg Ser Lys Asp Thr Asp Ala Leu Ile Asp Ala Ile Asp Thr				
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Gly Ala Phe Glu Val Asn Phe Met Asp Asp Val Gly Gln Thr Leu Leu				
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Glu Arg Gly Ala Asp Val Asn Arg Gly Gln Arg Ser Ser Ser Leu His				
401	406	411	416	

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Tyr Ala Ala Cys Phe Gly Arg Pro Gln Val Ala Lys Thr Leu Leu Arg	
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His Gly Ala Asn Pro Asp Leu Arg Asp Glu Asp Gly Lys Thr Pro Leu	
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Asp Lys Ala Arg Glu Arg Gly His Ser Glu Val Val Ala Ile Leu Gln	
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Ser Pro Gly Asp Trp Met Cys Pro Val Asn Lys Gly Asp Asp Lys Lys	
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Lys Lys Asp Thr Asn Lys Asp Glu Glu Glu Cys Asn Glu Pro Lys Gly	
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Val Glu Ile Thr Ala Thr Val Leu Asp Gln Glu Asp Asp Asp Asp Gly	
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His Leu Leu Ala Leu Gln Ile Ile Arg Asp Leu Val Asp Lys Gly Gly	
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Asp Ile Phe Leu Asp Gln Leu Ala Arg Leu Gly Val Ile Ser Lys Val	
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Ser Thr Leu Ala Gly Pro Ser Ser Asp Asp Glu Asn Glu Glu Glu Ser	
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Lys Pro Glu Lys Glu Asp Glu Pro Gln Glu Asp Ala Lys Glu Leu Gln	
625 630 635 640	

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Gln Gly Lys Pro Tyr His Trp Arg Asp Trp Ser Ile Ile Arg Gly Arg	
641 646 651 656	
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Asp Cys Leu Tyr Ile Trp Ser Asp Ala Ala Ala Leu Glu Leu Ser Asn	
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Val Arg Thr Met Ala Arg Asp Leu Tyr Asp Asp His Phe Lys Ala Val	
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Gln Leu Glu Ser Ser Trp Glu Leu His Thr Asn Arg Gln Cys Ile Glu	
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gaa caa tta acc agc aaa tgt cct ttt cta ata cca ttt gaa act aga Glu Gln Leu Thr Ser Lys Cys Pro Phe Leu Ile Pro Phe Glu Thr Arg 2049 2054 2059 2064				6192
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Gln Asp Asn Arg Leu Val Asp Leu Pro Ile Ser Lys Pro Phe Phe Lys	
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Asn Pro His Arg Ala Arg Phe Leu Lys Glu Ile Lys Asp Leu Ala Ile	
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Phe Arg Asp Gly Phe Asn Lys Val Phe Pro Met Glu Lys Leu Ser Ser	
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Leu Asn *	
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Ser Arg Tyr *	
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10 15 20 25

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26 31 36 41

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42 47 52 57

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58 63 68 73

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Leu Ser Thr Asn Leu Val Gly Met Asp Lys Ala Leu Asn Gln Leu Ser
74 79 84 89

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90 95 100 105

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Val Ser Glu Gly Ile Arg Ala Val Asp Glu Arg Met Ser Lys Gln Glu
106 111 116 121

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Asp Ile Arg Lys Lys Lys Met Cys Val Leu Arg Leu Ile Gln Val Ile
122 127 132 137

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Glu Thr Ser Ala Leu Glu Ala Ser Ser Pro Leu Leu Thr Gly Gln Ile				
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Leu Glu Arg Ile Ala Thr Glu Phe Asn Gln Leu Gln Phe His Ala Val				
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Tyr Ala Thr Ile Asp Lys Thr Arg Asp Ala Glu Ala Leu Val Gly Gln				
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Asn Ser Val Trp Pro Gln Ile Val Gln Gly Leu Glu Glu Lys Leu Pro				
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Ser Leu Phe Asn Pro Gly Asn Pro Asp Ala Phe His Glu Lys Tyr Thr				
330	335	340	345	
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Thr Thr Ala Ser Ser Tyr Val Asp Ser Ala Leu Lys Pro Leu Phe Gln	
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Trp Leu Glu Gly Thr Leu Ser Glu Ser Thr His Lys Tyr Tyr Glu Thr	
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Val Ser Asp Val Leu Asn Ser Val Lys Lys Met Glu Glu Ser Leu Lys	
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Arg Leu Lys Gln Ala Arg Lys Thr Thr Pro Ala Asn Pro Val Gly Pro	
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Ser Gly Gly Met Ser Asp Asp Asp Lys Ile Arg Leu Gln Leu Ala Leu	
682 687 692 697	
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Asp Val Glu Tyr Leu Gly Glu Gln Ile Gln Lys Leu Gly Leu Gln Ala	
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Lys Asp Gln Ala Thr Ala Glu Gln Pro *	
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 Met Ser Trp Glu
 1
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 Ser Gly Ala Gly Pro Gly Leu Gly Ser Gln Gly Met Asp Leu Val Trp
 5 10 15 20
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 Ser Ala Trp Tyr Gly Lys Cys Val Lys Gly Lys Gly Ser Leu Pro Leu
 21 26 31 36
 tcg gcc cac ggc atc gtg gtc gcc tgg ctc agc agg gcc gag tgg gac 260
 Ser Ala His Gly Ile Val Val Ala Trp Leu Ser Arg Ala Glu Trp Asp
 37 42 47 52
 cag gtg acg gtt tat ctg ttc tgt gac gac cat aag ttg cag cgg tac 308
 Gln Val Thr Val Tyr Leu Phe Cys Asp Asp His Lys Leu Gln Arg Tyr
 53 58 63 68
 gcg ctt aac cgc atc acg gtg tgg agg agc agg tca ggc aac gaa ctc 356
 Ala Leu Asn Arg Ile Thr Val Trp Arg Ser Arg Ser Gly Asn Glu Leu
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 cct ctg gca gtg gct tct act gct gac ctg ata cgc tgt aag ctc ttg 404
 Pro Leu Ala Val Ala Ser Thr Ala Asp Leu Ile Arg Cys Lys Leu Leu
 85 90 95 100
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 Asp Val Thr Gly Gly Leu Gly Thr Asp Glu Leu Arg Leu Leu Tyr Gly
 101 106 111 116
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 117 122 127 132
 ttt gcc aag gtc ccc ctc aag tgt ctg gct caa gag gta aat att ccg 548
 Phe Ala Lys Val Pro Leu Lys Cys Leu Ala Gln Glu Val Asn Ile Pro
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 Asp Trp Ile Val Asp Leu Arg His Glu Leu Thr His Lys Lys Met Pro
 149 154 159 164

cat ata aat gac tgc cgc aga ggc tgc tac ttt gtc ctg gat tgg ctc	644
His Ile Asn Asp Cys Arg Arg Gly Cys Tyr Phe Val Leu Asp Trp Leu	
165 170 175 180	
cag aag acc tat tgg tgc cgc caa ctg gag aac agc ctg aga gag acc	692
Gln Lys Thr Tyr Trp Cys Arg Gln Leu Glu Asn Ser Leu Arg Glu Thr	
181 186 191 196	
tgg gag ttg gag gag ttc agg gaa ggg ata gag gaa gag gat caa gag	740
Trp Glu Leu Glu Glu Phe Arg Glu Gly Ile Glu Glu Glu Asp Gln Glu	
197 202 207 212	
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Glu Asp Lys Asn Ile Val Val Asp Asp Ile Thr Glu Gln Lys Pro Glu	
213 218 223 228	
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Pro Gln Asp Asp Gly Lys Ser Thr Glu Ser Asp Val Lys Ala Asp Gly	
229 234 239 244	
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Asp Ser Lys Gly Ser Glu Glu Val Asp Ser His Cys Lys Lys Ala Leu	
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Ser His Lys Glu Leu Tyr Glu Arg Ala Arg Glu Leu Leu Val Ser Tyr	
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gca gag ctc aag ggc gtt aca tgc gag aac agg gag gct gtg ctg gat	1076
Ala Glu Leu Lys Gly Val Thr Cys Glu Asn Arg Glu Ala Val Leu Asp	
309 314 319 324	
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Ala Leu Gln Ile Glu Tyr Glu Glu Asn Val Asp Leu Asn Asp Val Leu	
341 346 351 356	
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Val Pro Lys Pro Phe Ser Gln Phe Trp Gln Pro Leu Leu Arg Gly Leu	
357 362 367 372	
cac tcc cag aac ttc acg cag gcc cta ttg gag agg atg ctc tct gaa	1268
His Ser Gln Asn Phe Thr Gln Ala Leu Leu Glu Arg Met Leu Ser Glu	
373 378 383 388	

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Leu Pro Ala Leu Gly Ile Ser Gly Ile Arg Pro Thr Tyr Ile Leu Arg	
389 394 399 404	
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Trp Thr Val Glu Leu Ile Val Ala Asn Thr Lys Thr Gly Arg Asn Ala	
405 410 415 420	
cgc cga ttt tct gca ggc cag tgg gaa gca aga agg ggc tgg agg ctg	1412
Arg Arg Phe Ser Ala Gly Gln Trp Glu Ala Arg Arg Gly Trp Arg Leu	
421 426 431 436	
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Phe Asn Cys Ser Ala Ser Leu Asp Trp Pro Arg Met Val Glu Ser Cys	
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Leu Gly Ser Pro Cys Trp Ala Ser Pro Gln Leu Leu Arg Ile Ile Phe	
453 458 463 468	
aaa gcc atg ggg cag ggc ctg cca gac gag gag cag gag aag ctg ctg	1556
Lys Ala Met Gly Gln Gly Leu Pro Asp Glu Glu Gln Glu Lys Leu Leu	
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cgc atc tgt tcc att tat acc cag agt gga gaa aac agc ctg gtg cag	1604
Arg Ile Cys Ser Ile Tyr Thr Gln Ser Gly Glu Asn Ser Leu Val Gln	
485 490 495 500	
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Glu Gly Ser Glu Ala Ser Pro Ile Gly Lys Ser Pro Tyr Thr Leu Asp	
501 506 511 516	
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Ser Leu Tyr Trp Ser Val Lys Pro Ala Ser Ser Ser Phe Gly Ser Glu	
517 522 527 532	
gca aag gcc cag caa cag gag gag cag ggc agt gtt aat gat gtc aag	1748
Ala Lys Ala Gln Gln Gln Glu Glu Gln Gly Ser Val Asn Asp Val Lys	
533 538 543 548	
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Glu Glu Glu Lys Glu Glu Lys Glu Val Leu Pro Asp Gln Val Glu Glu	
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565 570 575 580	
gaa gat gat gaa gag gaa gac aga atg gag gtg ggg cct ttc tct aca	1892
Glu Asp Asp Glu Glu Glu Asp Arg Met Glu Val Gly Pro Phe Ser Thr	
581 586 591 596	
ggg caa gag tcc ccc act gcc gag aat gct agg ctt ctg gcc cag aaa	1940
Gly Gln Glu Ser Pro Thr Ala Glu Asn Ala Arg Leu Leu Ala Gln Lys	
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[illegible]

1217

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Ser	Ala	His	Gly	Ile	Val	Val	Ala	Trp	Leu	Ser	Arg	Ala	Glu	Trp	Asp	
37					42					47					52	
cag	gtg	acg	gtt	tat	ctg	ttc	tgt	gac	gac	cat	aag	ttg	cag	cgg	tac	308
Gln	Val	Thr	Val	Tyr	Leu	Phe	Cys	Asp	Asp	His	Lys	Leu	Gln	Arg	Tyr	
53					58					63					68	
gcg	ctt	aac	cgc	atc	acg	gtg	tgg	agg	agc	agg	tca	ggc	aac	gaa	ctc	356
Ala	Leu	Asn	Arg	Ile	Thr	Val	Trp	Arg	Ser	Arg	Ser	Gly	Asn	Glu	Leu	
69					74					79					84	
cct	ctg	gca	gtg	gct	tct	act	gct	gac	ctg	ata	cgc	tgt	aag	ctc	ttg	404
Pro	Leu	Ala	Val	Ala	Ser	Thr	Ala	Asp	Leu	Ile	Arg	Cys	Lys	Leu	Leu	
85					90					95					100	
gat	gta	act	ggt	ggc	ttg	ggc	act	gat	gaa	ctt	aga	ctg	ctc	tat	ggc	452
Asp	Val	Thr	Gly	Gly	Leu	Gly	Thr	Asp	Glu	Leu	Arg	Leu	Leu	Tyr	Gly	
101					106					111					116	
atg	gca	ttg	gtc	agg	ttt	gtg	aat	ctt	atc	tca	gag	agg	aag	aca	aag	500
Met	Ala	Leu	Val	Arg	Phe	Val	Asn	Leu	Ile	Ser	Glu	Arg	Lys	Thr	Lys	
117					122					127					132	
ttt	gcc	aag	gtc	ccc	ctc	aag	tgt	ctg	gct	caa	gag	gta	aat	att	ccg	548
Phe	Ala	Lys	Val	Pro	Leu	Lys	Cys	Leu	Ala	Gln	Glu	Val	Asn	Ile	Pro	
133					138					143					148	
gat	tgg	att	gtt	gac	ctt	cgc	cat	gag	ttg	acc	cac	aag	aaa	atg	ccc	596
Asp	Trp	Ile	Val	Asp	Leu	Arg	His	Glu	Leu	Thr	His	Lys	Lys	Met	Pro	
149					154					159					164	
cat	ata	aat	gac	tgc	cgc	aga	ggc	tgc	tac	ttt	gtc	ctg	gat	tgg	ctc	644
His	Ile	Asn	Asp	Cys	Arg	Arg	Gly	Cys	Tyr	Phe	Val	Leu	Asp	Trp	Leu	
165					170					175					180	
cag	aag	acc	tat	tgg	tgc	cgc	caa	ctg	gag	aac	agc	ctg	aga	gag	acc	692
Gln	Lys	Thr	Tyr	Trp	Cys	Arg	Gln	Leu	Glu	Asn	Ser	Leu	Arg	Glu	Thr	
181					186					191					196	
tgg	gag	ttg	gag	gag	ttc	agg	gaa	ggg	ata	gag	gaa	gag	gat	caa	gag	740
Trp	Glu	Leu	Glu	Glu	Phe	Arg	Glu	Gly	Ile	Glu	Glu	Glu	Asp	Gln	Glu	
197					202					207					212	
gaa	gat	aag	aac	att	gtt	gtt	gat	gac	atc	aca	gaa	cag	aaa	cca	gag	788
Glu	Asp	Lys	Asn	Ile	Val	Val	Asp	Asp	Ile	Thr	Glu	Gln	Lys	Pro	Glu	
213					218					223					228	
cct	cag	gat	gat	ggg	aaa	agt	acg	gag	tca	gat	gta	aag	gcc	gat	gga	836
Pro	Gln	Asp	Asp	Gly	Lys	Ser	Thr	Glu	Ser	Asp	Val	Lys	Ala	Asp	Gly	
229					234					239					244	
gac	agc	aaa	ggc	agc	gaa	gag	gtg	gat	tct	cat	tgc	aaa	aag	gcc	ctg	884
Asp	Ser	Lys	Gly	Ser	Glu	Glu	Val	Asp	Ser	His	Cys	Lys	Lys	Ala	Leu	

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Ser His Lys Glu Leu Tyr Glu Arg Ala Arg Glu Leu Leu Val Ser Tyr				
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gaa gag gag cag ttt acg gtg ctg gag aaa ttt agg tat tta cct aag				980
Glu Glu Glu Gln Phe Thr Val Leu Glu Lys Phe Arg Tyr Leu Pro Lys				
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Ala Ile Lys Ala Trp Asn Asn Pro Ser Pro Arg Val Glu Cys Val Leu				
293	298	303	308	
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Ala Glu Leu Lys Gly Val Thr Cys Glu Asn Arg Glu Ala Val Leu Asp				
309	314	319	324	
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Ala Phe Leu Asp Asp Gly Phe Leu Val Pro Thr Phe Glu Gln Leu Ala				
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Ala Leu Gln Ile Glu Tyr Glu Asp Gly Gln Thr Glu Val Gln Arg Gly				
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Ala Arg Arg Phe Ser Ala Gly Gln Trp Glu Ala Arg Arg Gly Trp Arg				
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Cys Leu Gly Ser Pro Cys Trp Ala Ser Pro Gln Leu Leu Arg Ile Ile				
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Gln Glu Gly Ser Glu Ala Ser Pro Ile Gly Lys Ser Pro Tyr Thr Leu	
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597 602 607 612	
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Thr Gly Gln Glu Ser Pro Thr Ala Glu Asn Ala Arg Leu Leu Ala Gln	
613 618 623 628	
aaa aga gga gct ttg cag ggc tct gca tgg cag gtt agc tca gaa gac	2036
Lys Arg Gly Ala Leu Gln Gly Ser Ala Trp Gln Val Ser Ser Glu Asp	
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Val Arg Trp Asp Thr Phe Pro Leu Gly Arg Met Pro Gly Gln Thr Glu	
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661 666 671 676	
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Asp Gln Pro Val Leu Glu Gln Arg Leu Glu Pro Ser Thr Cys Lys Thr	
677 682 687 692	
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Asp Thr Leu Gly Leu Ser Cys Gly Val Gly Ser Gly Asn Cys Ser Asn	
693 698 703 708	

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Ser Lys Lys Lys Asp Gln Glu Glu Asn Lys Gly Ala Thr Ser Trp Pro	
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Glu Phe Tyr Ile Asp Gln Leu Asn Ser Met Ala Ala Arg Lys Ser Leu	
104 109 114 119	
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120 125 130 135	
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Ser Leu Lys Thr Ala Leu Arg Thr Lys Pro Met Arg Phe Val Thr Arg	
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168 173 178 183	
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Gln Lys Tyr Ala Ser Glu Arg Thr Arg Phe Gln Thr Leu Ile Asn Asp	
248 253 258 263	
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Leu Asp Lys Ser Thr Gly Arg Tyr Arg Asp Glu Val Ser Leu Lys Thr	
264 269 274 279	
gcc atc atg tcc ttc att aat gca gtg ctc agc caa ggt gca gga gtg	1037
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280 285 290 295	
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Glu Ser Leu Asp Phe Arg Leu His Leu Arg Tyr Glu Phe Leu Met Leu	
296 301 306 311	
gga att caa cct gta ata gat aaa tta agg gaa cac gaa aat tca aca	1133

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328	333	338	343
cta gaa ttt gcc aaa aga ttt gaa ctg gtt cac ata gac aca aaa agt			1229
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344	349	354	359
gca act cag atg ttt gag ctg acc agg aag agg ctg aca cat agt gaa			1277
Ala Thr Gln Met Phe Glu Leu Thr Arg Lys Arg Leu Thr His Ser Glu			
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Ala Tyr Pro His Phe Met Ser Ile Leu His His Cys Leu Gln Met Pro			
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tac aag agg agt ggc aac act gtt cag tac tgg cta cta cta gat aga			1373
Tyr Lys Arg Ser Gly Asn Thr Val Gln Tyr Trp Leu Leu Leu Asp Arg			
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Ile Ile Gln Gln Ile Val Ile Gln Asn Asp Lys Gly Gln Asp Pro Asp			
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Val Asn Glu Asn Glu Val Lys Gln Trp Lys Glu Gln Ala Glu Lys Met			
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Arg Lys Glu His Asn Glu Leu Gln Gln Lys Leu Glu Lys Lys Glu Arg			
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Glu Cys Asp Ala Lys Thr Gln Glu Lys Glu Glu Met Met Gln Thr Leu			
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Asn Lys Met Lys Glu Lys Leu Glu Lys Glu Thr Thr Glu His Lys Gln			
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Val Lys Gln Gln Val Ala Asp Leu Thr Ala Gln Leu His Glu Leu Ser			
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Ser Leu Tyr Phe Lys Lys Lys Phe Ala Glu Arg Val Ala Glu Val Lys	
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attcccaacc caatactggg gccttctcaa aaggagcaaa ttaaacaata aaccagacag 2470
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tgtggaagtt gaaaaaaaaa aaa 2553

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<213> Homo sapiens

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<222> (439) .. (2304)

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tcgaccacag cgtccgggag gttgtgccgc atctagagag tcggggagcc gccccgcac 180
ccaggccttc tcgcgtgcc tggctgctgg tgaagcccgc ggcgcgcgcc tctcccggac 240
cctgcagggt aaaagaatgt cacatgtcag catttgtacc tgaagtcagc atgcaaagtt 300
cagggtacat ggatgaatgc caacttttgc atttcccatg tgtatcctgt gaccattcta 360
tctgggaaca tccttcaaag agttcatgca tcttactgag gacacctgac cttttgaagc 420
ttcataattc acatctag atg tca ccg gtc ttt ccc atg tta aca gtt ctg 471
Met Ser Pro Val Phe Pro Met Leu Thr Val Leu
1 5

acc atg ttt tat tat ata tgc ctt cgg cgc cga gcc agg aca gct aca 519
Thr Met Phe Tyr Tyr Ile Cys Leu Arg Arg Arg Ala Arg Thr Ala Thr
12 17 22 27

aga gga gaa atg atg aac acc cat aga gct ata gaa tca aac agc cag 567
Arg Gly Glu Met Met Asn Thr His Arg Ala Ile Glu Ser Asn Ser Gln
28 33 38 43

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act tcc cct ctc aat gca gag gta gtc cag tat gcc aaa gaa gta gtg	615
Thr Ser Pro Leu Asn Ala Glu Val Val Gln Tyr Ala Lys Glu Val Val	
44 49 54 59	
gat ttc agt tcc cat tat gga agt gag aat agt atg tcc tat act atg	663
Asp Phe Ser Ser His Tyr Gly Ser Glu Asn Ser Met Ser Tyr Thr Met	
60 65 70 75	
tgg aat ttg gct ggt gta cca aat gta ttc cca agt tct ggt gac ttt	711
Trp Asn Leu Ala Gly Val Pro Asn Val Phe Pro Ser Ser Gly Asp Phe	
76 81 86 91	
act cag aca gct gtg ttt cga act tat ggg aca tgg, tgg gat cag tgt	759
Thr Gln Thr Ala Val Phe Arg Thr Tyr Gly Thr Trp ³ Trp Asp Gln Cys	
92 97 102 107	
cct agt gct tcc ttg cca ttc aag agg acg cca cct aat ttt cag agc	807
Pro Ser Ala Ser Leu Pro Phe Lys Arg Thr Pro Pro Asn Phe Gln Ser	
108 113 118 123	
cag gac tat gtg gaa ctt act ttt gaa caa cag gtg tat cct aca gct	855
Gln Asp Tyr Val Glu Leu Thr Phe Glu Gln Gln Val Tyr Pro Thr Ala	
124 129 134 139	
gta cat gtt cta gaa acc tat cat ccc gga gca gtc att aga att ctc	903
Val His Val Leu Glu Thr Tyr His Pro Gly Ala Val Ile Arg Ile Leu	
140 145 150 155	
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Ala Cys Ser Ala Asn Pro Tyr Ser Pro Asn Pro Pro Ala Glu Val Arg	
156 161 166 171	
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Trp Glu Ile Leu Trp Ser Glu Arg Pro Thr Lys Val Asn Ala Ser Gln	
172 177 182 187	
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Ala Arg Gln Phe Lys Pro Cys Ile Lys Gln Ile Asn Phe Pro Thr Asn	
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Leu Ile Arg Leu Glu Val Asn Ser Ser Leu Leu Glu Tyr Tyr Thr Glu	
204 209 214 219	
tta gat gca gtt gtg cta cat ggt gtg aag gac aag cca gtg ctt tct	1143
Leu Asp Ala Val Val Leu His Gly Val Lys Asp Lys Pro Val Leu Ser	
220 225 230 235	
ctc aag act tca ctt att gac atg aat gat ata gaa gat gat gcc tat	1191
Leu Lys Thr Ser Leu Ile Asp Met Asn Asp Ile Glu Asp Asp Ala Tyr	
236 241 246 251	
gca gaa aag gat ggt tgt gga atg gac agt ctt aac aaa aag ttt agc	1239
Ala Glu Lys Asp Gly Cys Gly Met Asp Ser Leu Asn Lys Lys Phe Ser	
252 257 262 267	
agt gct gtc ctc ggg gaa ggg cca aat aat ggg tat ttt gat aaa cta	1287

Ser Ala Val Leu Gly Glu Gly Pro Asn Asn Gly Tyr Phe Asp Lys Leu	
268 273 278 283	
cct tat gag ctt att cag ctg att ctg aat cat ctt aca cta cca gac	1335
Pro Tyr Glu Leu Ile Gln Leu Ile Leu Asn His Leu Thr Leu Pro Asp	
284 289 294 299	
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Leu Cys Arg Leu Ala Gln Thr Cys Lys Leu Leu Ser Gln His Cys Cys	
300 305 310 315	
gat cct ctg caa tac atc cac ctc aat ctg caa cca tac tgg gca aaa	1431
Asp Pro Leu Gln Tyr Ile His Leu Asn Leu Gln Pro Tyr Trp Ala Lys	
316 321 326 331	
cta gat gac act tct ctg gaa ttt cta cag tct cgc tgc act ctt gtc	1479
Leu Asp Asp Thr Ser Leu Glu Phe Leu Gln Ser Arg Cys Thr Leu Val	
332 337 342 347	
cag tgg ctt aat tta tct tgg act ggc aat aga ggc ttc atc tct gtt	1527
Gln Trp Leu Asn Leu Ser Trp Thr Gly Asn Arg Gly Phe Ile Ser Val	
348 353 358 363	
gca gga ttt agc agg ttt ctg aag gtt tgt gga tcc gaa tta gta cgc	1575
Ala Gly Phe Ser Arg Phe Leu Lys Val Cys Gly Ser Glu Leu Val Arg	
364 369 374 379	
ctt gaa ttg tct tgc agc cac ttt ctt aat gaa act tgc tta gaa gtt	1623
Leu Glu Leu Ser Cys Ser His Phe Leu Asn Glu Thr Cys Leu Glu Val	
380 385 390 395	
att tct gag atg tgt cca aat cta cag gcc tta aat ctc tcc tcc tgt	1671
Ile Ser Glu Met Cys Pro Asn Leu Gln Ala Leu Asn Leu Ser Ser Cys	
396 401 406 411	
gat aag cta cca cct caa gct ttc aac cac att gcc aag tta tgc agc	1719
Asp Lys Leu Pro Pro Gln Ala Phe Asn His Ile Ala Lys Leu Cys Ser	
412 417 422 427	
ctt aaa cga ctt gtt ctc tat cga aca aaa gta gag caa aca gca ctg	1767
Leu Lys Arg Leu Val Leu Tyr Arg Thr Lys Val Glu Gln Thr Ala Leu	
428 433 438 443	
ctc agc att ttg aac ttc tgt tca gag ctt cag cac ctc agt tta ggc	1815
Leu Ser Ile Leu Asn Phe Cys Ser Glu Leu Gln His Leu Ser Leu Gly	
444 449 454 459	
agt tgt gtc atg att gaa gac tat gat gtg ata gct agc atg ata gga	1863
Ser Cys Val Met Ile Glu Asp Tyr Asp Val Ile Ala Ser Met Ile Gly	
460 465 470 475	
gcc aag tgt aaa aaa ctc cgg acc ctg gat ctg tgg aga tgt aag aat	1911
Ala Lys Cys Lys Lys Leu Arg Thr Leu Asp Leu Trp Arg Cys Lys Asn	
476 481 486 491	
att act gag aat gga ata gca gaa ctg gct tct ggg tgt cca cta ctg	1959
Ile Thr Glu Asn Gly Ile Ala Glu Leu Ala Ser Gly Cys Pro Leu Leu	

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Glu Glu Leu Asp Leu Gly Trp Cys Pro Thr Leu Gln Ser Ser Thr Gly				
508	513	518	523	
tgc ttc acc aga ctg gca cac cag ctc cca aac ttg caa aaa ctc ttt				2055
Cys Phe Thr Arg Leu Ala His Gln Leu Pro Asn Leu Gln Lys Leu Phe				
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Leu Thr Ala Asn Arg Ser Val Cys Asp Thr Asp Ile Asp Glu Leu Ala				
540	545	550	555	
tgt aat tgt acc agg tta cag cag ctg gac ata tta gga aca aga atg				2151
Cys Asn Cys Thr Arg Leu Gln Gln Leu Asp Ile Leu Gly Thr Arg Met				
556	561	566	571	
gta agt ccg gca tcc tta aga aaa ctc ctg gaa tct tgt aaa gat ctt				2199
Val Ser Pro Ala Ser Leu Arg Lys Leu Leu Glu Ser Cys Lys Asp Leu				
572	577	582	587	
tct tta ctt gat gtg tcc ttc tgt tgc cag att gat aac aga gct gtg				2247
Ser Leu Leu Asp Val Ser Phe Cys Ser Gln Ile Asp Asn Arg Ala Val				
588	593	598	603	
cta gaa ctg aat gca agc ttt cca aaa gtg ttc ata aaa aag agc ttt				2295
Leu Glu Leu Asn Ala Ser Phe Pro Lys Val Phe Ile Lys Lys Ser Phe				
604	609	614	619	
act cag tga cttaata tatgttctgt attaaaatta atgtgctttg ttgggggttta				2351
Thr Gln *				
620				
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tgtagatttt aaagaaaaat atgaaattgt ccattaaatc aagtaaaaaat gtgcacaaat				2471
gttttcataa aatactgcaa gcacttctct tcaagaatat gagtggatat tatttttacc				2531
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cacttttctt ctgatatttt tgtctatttc actactggat aatgccaata taaaaatttg				3071

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 tctgggaaca tccttcaaag agttcatgca tcttactgag gacacctgac cttttgaagc 420
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 Met Ser Pro Val Phe Pro Met Leu Thr Val Leu
 1 5
 acc atg ttt tat tat ata tgc ctt cgg cgc cga gcc agg aca gct aca 519
 Thr Met Phe Tyr Tyr Ile Cys Leu Arg Arg Arg Ala Arg Thr Ala Thr
 12 17 22 27
 aga gga gaa atg atg aac acc cat aga gct ata gaa tca aac agc cag 567
 Arg Gly Glu Met Met Asn Thr His Arg Ala Ile Glu Ser Asn Ser Gln
 28 33 38 43
 act tcc cct ctc aat gca gag gta gtc cag tat gcc aaa gaa gta gtg 615
 Thr Ser Pro Leu Asn Ala Glu Val Val Gln Tyr Ala Lys Glu Val Val
 44 49 54 59
 gat ttc agt tcc cat tat gga agt gag aat agt atg tcc tat act atg 663
 Asp Phe Ser Ser His Tyr Gly Ser Glu Asn Ser Met Ser Tyr Thr Met
 60 65 70 75
 tgg aat ttg gct ggt gta cca aat gta ttc cca agt tct ggt gac ttt 711
 Trp Asn Leu Ala Gly Val Pro Asn Val Phe Pro Ser Ser Gly Asp Phe
 76 81 86 91
 act cag aca gct gtg ttt cga act tat ggg aca tgg tgg gat cag tgt 759

Thr Gln Thr Ala Val Phe Arg Thr Tyr Gly Thr Trp Trp Asp Gln Cys	
92 97 102 107	
cct agt gct tcc ttg cca ttc aag agg acg cca cct aat ttt cag agc	807
Pro Ser Ala Ser Leu Pro Phe Lys Arg Thr Pro Pro Asn Phe Gln Ser	
108 113 118 123	
cag gac tat gtg gaa ctt act ttt gaa caa cag gtg tat cct aca gct	855
Gln Asp Tyr Val Glu Leu Thr Phe Glu Gln Gln Val Tyr Pro Thr Ala	
124 129 134 139	
gta cat gtt cta gaa acc tat cat ccc gga gca gtc att aga att ctc	903
Val His Val Leu Glu Thr Tyr His Pro Gly Ala Val Ile Arg Ile Leu	
140 145 150 155	
gct tgt tct gca aat cct tat tcc cca aat cca cca gct gaa gta aga	951
Ala Cys Ser Ala Asn Pro Tyr Ser Pro Asn Pro Pro Ala Glu Val Arg	
156 161 166 171	
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Trp Glu Ile Leu Trp Ser Glu Arg Pro Thr Lys Val Asn Ala Ser Gln	
172 177 182 187	
gct cgc cag ttt aaa cct tgt att aag cag ata aat ttc ccc aca aat	1047
Ala Arg Gln Phe Lys Pro Cys Ile Lys Gln Ile Asn Phe Pro Thr Asn	
188 193 198 203	
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Leu Ile Arg Leu Glu Val Asn Ser Ser Leu Leu Glu Tyr Tyr Thr Glu	
204 209 214 219	
tta gat gca gtt gtg cta cat ggt gtg aag gac aag cca gtg ctt tct	1143
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220 225 230 235	
ctc aag act tca ctt att gac atg aat gat ata gaa gat gat gcc tat	1191
Leu Lys Thr Ser Leu Ile Asp Met Asn Asp Ile Glu Asp Asp Ala Tyr	
236 241 246 251	
gca gaa aag gat ggt tgt gga atg gac agt ctt aac aaa aag ttt agc	1239
Ala Glu Lys Asp Gly Cys Gly Met Asp Ser Leu Asn Lys Lys Phe Ser	
252 257 262 267	
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Ser Ala Val Leu Gly Glu Gly Pro Asn Asn Gly Tyr Phe Asp Lys Leu	
268 273 278 283	
cct tat gag ctt att cag ctg att ctg aat cat ctt aca cta cca gac	1335
Pro Tyr Glu Leu Ile Gln Leu Ile Leu Asn His Leu Thr Leu Pro Asp	
284 289 294 299	
ctg tgt aga tta gca cag act tgc aaa cta ctg agc cag cat tgc tgt	1383
Leu Cys Arg Leu Ala Gln Thr Cys Lys Leu Leu Ser Gln His Cys Cys	
300 305 310 315	
gat cct ctg caa tac atc cac ctc aat ctg caa cca tac tgg gca aaa	1431
Asp Pro Leu Gln Tyr Ile His Leu Asn Leu Gln Pro Tyr Trp Ala Lys	

316	321	326	331	
cta gat gac act tct	ctg gaa ttt cta cag tct cgc tgc act ctt gtc			1479
Leu Asp Asp Thr Ser	Leu Glu Phe Leu Gln Ser Arg Cys Thr Leu Val			
332	337	342	347	
cag tgg ctt aat tta	tct tgg act ggc aat aga ggc ttc atc tct gtt			1527
Gln Trp Leu Asn Leu	Ser Trp Thr Gly Asn Arg Gly Phe Ile Ser Val			
348	353	358	363	
gca gga ttt agc agg ttt	ctg aag gtt tgt gga tcc gaa tta gta cgc			1575
Ala Gly Phe Ser Arg	Phe Leu Lys Val Cys Gly Ser Glu Leu Val Arg			
364	369	374	379	
ctt gaa ttg tct tgc	agc cac ttt ctt aat gaa act tgc tta gaa gtt			1623
Leu Glu Leu Ser Cys	Ser His Phe Leu Asn Glu Thr Cys Leu Glu Val			
380	385	390	395	
att tct gag atg tgt	cca aat cta cag gcc tta aat ctc tcc tcc tgt			1671
Ile Ser Glu Met Cys	Pro Asn Leu Gln Ala Leu Asn Leu Ser Ser Cys			
396	401	406	411	
gat aag cta cca cct	caa got ttc aac cac att gcc aag tta tgc agc			1719
Asp Lys Leu Pro Pro	Gln Ala Phe Asn His Ile Ala Lys Leu Cys Ser			
412	417	422	427	
ctt aaa cga ctt gtt	ctc tat cga aca aaa gta gag att gaa gac tat			1767
Leu Lys Arg Leu Val	Leu Tyr Arg Thr Lys Val Glu Ile Glu Asp Tyr			
428	433	438	443	
gat gtg ata gct agc	atg ata gga gcc aag tgt aaa aaa ctc cgg acc			1815
Asp Val Ile Ala Ser	Met Ile Gly Ala Lys Cys Lys Lys Leu Arg Thr			
444	449	454	459	
ctg gat ctg tgg aga	tgt aag aat att act gag aat gga ata gca gaa			1863
Leu Asp Leu Trp Arg	Cys Lys Asn Ile Thr Glu Asn Gly Ile Ala Glu			
460	465	470	475	
ctg gct tct ggg tgt	cca cta ctg gag gag ctt gac ctt ggc tgg tgc			1911
Leu Ala Ser Gly Cys	Pro Leu Leu Glu Glu Leu Asp Leu Gly Trp Cys			
476	481	486	491	
cca act ctg cag agc	agc acc ggg tgc ttc acc aga ctg gca cac cag			1959
Pro Thr Leu Gln Ser	Ser Thr Gly Cys Phe Thr Arg Leu Ala His Gln			
492	497	502	507	
ctc cca aac ttg caa	aaa ctc ttt ctt aca gct aat aga tct gtg tgt			2007
Leu Pro Asn Leu Gln	Lys Leu Phe Leu Thr Ala Asn Arg Ser Val Cys			
508	513	518	523	
gac aca gac att gat	gaa ttg gca tgt aat tgt acc agg tta cag cag			2055
Asp Thr Asp Ile Asp	Glu Leu Ala Cys Asn Cys Thr Arg Leu Gln Gln			
524	529	534	539	
ctg gac ata tta gga	aca aga atg gta agt ccg gca tcc tta aga aaa			2103
Leu Asp Ile Leu Gly	Thr Arg Met Val Ser Pro Ala Ser Leu Arg Lys			
540	545	550	555	

ctc ctg gaa tct tgt aaa gat ctt tct tta ctt gat gtg tcc ttc tgt	2151
Leu Leu Glu Ser Cys Lys Asp Leu Ser Leu Leu Asp Val Ser Phe Cys	
556 561 566 571	
tcg cag att gat aac aga gct gtg cta gaa ctg aat gca agc ttt cca	2199
Ser Gln Ile Asp Asn Arg Ala Val Leu Glu Leu Asn Ala Ser Phe Pro	
572 577 582 587	
aaa gtg ttc ata aaa aag agc ttt act cag tga cttaatat atgttctgta	2250
Lys Val Phe Ile Lys Lys Ser Phe Thr Gln *	
588 593 598	
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gtt gca gca gag aaa atg tac cac act cat aga cgg cga agg ctg gtc	1647
Val Ala Ala Glu Lys Met Tyr His Thr His Arg Arg Arg Arg Leu Val	
425 430 435 440	
cga aaa cgc aag aaa gat tta aca cag act gct tca agc acc gca agg	1695
Arg Lys Arg Lys Lys Asp Leu Thr Gln Thr Ala Ser Ser Thr Ala Arg	
441 446 451 456	
gcc atg gag gaa ttg caa gac caa gag ggc tgg gaa tat gct tct cta	1743
Ala Met Glu Glu Leu Gln Asp Gln Glu Gly Trp Glu Tyr Ala Ser Leu	
457 462 467 472	
att ggc tgg aaa ttt cac tgg aaa caa cgt agt tca gat acc ttc cgc	1791
Ile Gly Trp Lys Phe His Trp Lys Gln Arg Ser Ser Asp Thr Phe Arg	
473 478 483 488	
cgc aga cgc tgg agg aga aaa atg gct cct tca gaa aca cat ggt gca	1839
Arg Arg Arg Trp Arg Arg Lys Met Ala Pro Ser Glu Thr His Gly Ala	
489 494 499 504	
gct gcc atc ttt aaa ctt gaa ggt gcc ctt ggg gca gac act acc gaa	1887
Ala Ala Ile Phe Lys Leu Glu Gly Ala Leu Gly Ala Asp Thr Thr Glu	
505 510 515 520	
gat ggg gat gag aag agc ctg gag aaa cag aag cac agt gcc acc act	1935
Asp Gly Asp Glu Lys Ser Leu Glu Lys Gln Lys His Ser Ala Thr Thr	
521 526 531 536	
gtg ttc gga gca aac acc ccc att gtt tcc tgc aat ttt gac aga gac	1983
Val Phe Gly Ala Asn Thr Pro Ile Val Ser Cys Asn Phe Asp Arg Asp	
537 542 547 552	
tac atc tac cat ctg cgc tgc tat gtc tat caa gcc aga aac ctc ttg	2031
Tyr Ile Tyr His Leu Arg Cys Tyr Val Tyr Gln Ala Arg Asn Leu Leu	
553 558 563 568	
gct tta gat aag gat agc ttt tca gat cca ttt gct cat atc tgt ttc	2079
Ala Leu Asp Lys Asp Ser Phe Ser Asp Pro Phe Ala His Ile Cys Phe	
569 574 579 584	
ctc cat cgg agc aaa acc act gag atc atc cat tca acc ctg aat ccc	2127
Leu His Arg Ser Lys Thr Thr Glu Ile Ile His Ser Thr Leu Asn Pro	
585 590 595 600	
acg tgg gac caa aca att ata ttc gat gaa gtt gaa atc tat ggg gaa	2175
Thr Trp Asp Gln Thr Ile Ile Phe Asp Glu Val Glu Ile Tyr Gly Glu	
601 606 611 616	
ccc caa aca gtt cta cag aat cca ccc aaa gtt atc atg gaa ctt ttt	2223
Pro Gln Thr Val Leu Gln Asn Pro Pro Lys Val Ile Met Glu Leu Phe	
617 622 627 632	
gac aat gac caa gtg ggc aaa gat gaa ttt tta gga cga agc att ttc	2271
Asp Asn Asp Gln Val Gly Lys Asp Glu Phe Leu Gly Arg Ser Ile Phe	
633 638 643 648	

tct cct gtg gtg aaa ctg aac tca gaa atg gac atc aca ccc aaa ctt	2319
Ser Pro Val Val Lys Leu Asn Ser Glu Met Asp Ile Thr Pro Lys Leu	
649 654 659 664	
ctc tgg cac cca gta atg aat gga gac aaa gcc tgc ggg gat gtt ctt	2367
Leu Trp His Pro Val Met Asn Gly Asp Lys Ala Cys Gly Asp Val Leu	
665 670 675 680	
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